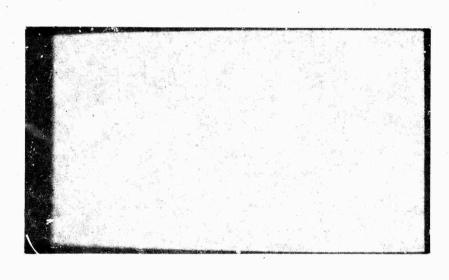
# **UNCLASSIFIED**

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FINAL REPORT

CEMINI B ANTENNA SYSTEM TESTING

Report TR 058-ADA.03 Model 195B

Contract No.	FO 4695-67-0023	
Laboratories	: Instrumentation and Stand	lards
•		
Prepared By	E.D. McKee If	Approved By Harold T Smith
	Test Engineer	Senior Group Engineer, Micro- wave Radiation Laboratory
Approved By	, William & Viendal	Approved By Fandalf
	Department Manager, Instrumentation and Standards Laboratory	

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#### ABSTRACT

The purpose of these tests was to determine the radiation distribution of the nose stub antenna mounted on the Gemini B Spacecraft. Tests were performed with and without the nose fairing and ejection spring, at the VHF-Voice (296.8 MHz) and the VHF-Recovery Beacon frequencies (243.0 MHz).

Test tests were conducted at a range of 500 feet using the gound level range technique with the reflection level reduced to at least 40 db down.

The tests were conducted on a 1/3 scale model of the Gemini B Space-craft at 729.0 MHz linearly polarized for the Recovery Beacon, and on a 1/3 scale model of the Gemini B Spacecraft and the (Model used in Laboratory was only a section 21 feet long, the actual laboratory is considerably larger) Manned Orbital Laboratory at 890.4 MHz left hand circularly polarized for the VHF-Voice and Recovery Beacon frequencies for a linear signal in horizontal (0) and vertical (0) polarizations.

The data results consists of Radiation Distribution Plots with information printed every two degrees of Phi with the 0.5 db resolution, polar plots for principal plane cuts and roll cuts for every ten degrees of Theta with integration information for calculation of the isotropic level, and punched tapes. Contour plots were drawn from information obtained from the RDP's.

No conclusions are drawn; data is submitted for analysis.

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## 1. INTRODUCTION

The purpose of these tests was to determine the radiation distribution of the Nose Stub Antenna on the Gemini B Spacecraft. In response to required parameters, the following test details were accomplished.

The VHF-Voice frequency, 296.8 MHz was run on the Gemini B with a section of Manned Orbital Laboratory, with and with the spacecraft nose fairing and ejection spring, for the left hand circular (LHC) polarization component.

The Recovery Beacon frequency 243.0 MHz was run on the Gemini B Space-craft only, with and without the spacecraft nose fairing and ejection spring, for horizontal (0) and vertical (0) polarizations.

Complete sets of polar patterns with Radiation Distribution Plots (RDP) were recorded, isotropic levels calculated, and contour plots drawn from the RDP's. Principal plane polar patterns were also to be made on Gemini B and Manned Oribtal Laboratory for vertical (Ø) and horizontal (O) polarizations at VHF-Voice and Recovery Beacon frequencies. The patterns, RDP's and Contour plots were made with respect to the IRIG Standard Coordinate System.

Tests were run at the Outdoor Microwave Antenna Range by the Instrumentation and Standards Laboratories during the period 6 June to 20 June 1967.

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#### 2. DESCRIPTION

The antenna tested was a 1/3 scale model of the nose stub located on forward end of the 1/3 scale model of the Gemini B Spacecraft.

The stub was tested with the Gemini B and Manned Orbital Laboratory (MOL) for the VHF-Voice frequency and with the Gemini B only for the Recovery Beacon Frequency. In each of these conditions, tests were run with and without the nose fairing and ejection spring.

The model fairing is a protective fiberglass cover with a fiberglass and Teflon protrusion that encloses the nose stub antenna. The ejection spring consists of an inner and outer spring and is used to jettison the nose fairing after obtaining orbit.

Photographs appear on pages 16 and 17.

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#### 3. FACILITIES

The radiation tests were conducted at the Outdoor Microwave and Antenna Range located at St. Charles, Missouri. The range has a 1500 foot graded and mowed area with 500 feet of concrete ramp.

The Gemini B Spacecraft was mounted on a 24 foot fiberglass model positioner mast at a distance of 500 feet from the receiving antenna, and the Gemini B with the Manned Orbital Laboratory was supported at the same distance by a fabricated structure shown on page 14. In both cases Radio Frequency absorbing material (B. F. Goodrich type VHP/18) was placed on the base of the positioner to minimize reflections.

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# 4. TEST SETUP AND PROCEDURE

For simplifying data identification, configuration members were assigned to the required combinations of nose condition (with or without fairing), frequency, or in the case of principal planes, polarization. Configurations are described on pages 8 and 9.

For this testing the 1/3 scale Nose Stub Antenna mounted on the 1/3 scale Gemin. B model spacecraft was used as the transmitting antenna. For the receiving antenna, a turnstile was used. The reason for this type of transmit and receive arrangement was to minimize losses in the return cable to the recording equipment.

The test frequencies were 890.4 MHz for the VHF-Voice and 729.0 MHz for the Recovery Beacon. These were the 1/3 scale frequencies.

Prior to running patterns on the nose stub antenna, a field probe of thetest aperture was made and the reflections were shown to be at least 40 db down.

After setting up for the LHC polarization, a linear antenna (log periodic) was rotated through 360 degrees of  $\emptyset$  at a  $\Theta$  angle of zero degrees to assure the circularity of the receiving turnstile antenna. After proving the circularity of the receiving antenna, left hand and right hand helixes were used to prove the proper polarization sense before actual testing was begun.

The patterns were measured using the IRIG Standard Coordinate System. Location of point  $p^{\dagger}y$  ( $\emptyset=0$ ,  $\theta=90^{\circ}$ ) is shown in sketch on page 12. The results were printed on the RDP. Roll patterns were taken every two degrees of Theta and the printout was made for every one db relative signal strength level with a resolution of plus or minus 0.5 db.

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The printed out polar patterns consisted of the principal planes plus a roll pattern for every ten degrees. Roll patterns were also integrated for the determination of the isotropic level by the pattern integration method.

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#### 5. TEST RESULTS

Test results data is included on pages tabulated below.

The patterns appear on the following pages.

CONFIGURATION NUMBER					PAGES	
· I		•	٠.		35 through 55	
п					57 through 77	
III					GBQ Tests *	
, IV		• • .	٠		GBQ Tests *	
<b>V</b>					GBQ Tests *	
VI	•				GBQ Tests *	
VII	•	•			79 through 81	
AIII					82 through 84	
K		•		•	85 through 87	
<b>X</b>			<u>.</u>		88 through 90	
. XI					91 through 132	
XII					134 through 175	

Isotropic calculations appear on pages 56, 78, 133, and 176.

RDP plots appear on pages 28, 29, 30, 31, 32, and 33.

Contour plots appear on pages 22, 23, 24, 25, 26, and 27.

\*Configuration numbers III, IV, V, and VI were assigned to TR 058-ADA.04 which was run concurrently with tests reported herein.

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#### 6. DISCUSSION OF TEST RESULTS

The contour plots were drawn from the information recorded on the RDP's. From the different relative field strength bands, the contour was drawn corresponding to the center of the band. In deep null areas where the levels change rapidly, the levels may appear more than three dB apart since the drawing of so many contours would be impossible.

The actual numbers that appear on the contours were determined by rounding off the calculated isotropic levels to the nearest whole integer and this level would be the zero contour for the contour plot. Differences obtained from numbers larger than the isotropic level would appear as negative contours and numbers smaller as positive contours. The negative and positive contours consecutively indicate dB below and dB above the calculated isotropic level.

#### 7. CONCLUSIONS

Data is submitted for analysis.

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#### LIST OF EQUIPMENT AND INSTRUMENTS

Specific instruments and equipment employed in this test are listed below, and their applicable calibrations are filed and are available for inspection upon request.

Test Equipment Manufacturer's Name or and		Serial Number or	
Instrument Name	Model Number	Laboratory Number	
Position- Indicator Unit	Scientific Atlanta PI3-222	261	
Positioner Control Unit	Scientific Atlanta PC4A	74	
Logarithmic Potentiometer	Scientific Atlanta 1852-40	24,	
Linear & Sq. Rt. Potenti- ometer	Scientific Atlanta 4512	530	
Crystal-Bolometer Ampli- fier	Scientific Atlanta CBA-21	343	
Pen Function Amplifier	Scientific Atlanta PFA-25	134	
Amplifier/Power Supply	Scientific Atlanta APR-20/30	383	
Polar Recorder	Scientific Atlanta APR 34/1:36	119	
Wide Range Receiver	Scientific Atlanta 4020	188	
Model Positioner	Scientific Atlanta 5863	1	
Tape Punch Recorder	Scientific Atlanta 1863	18	
Tape Reader	Scientific Atlanta 1880	1430778	
Integrator	Scientific Atlanta 6356	32	

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# LIST OF EQUIPMENT AND INSTRUMENTS

Specific instruments and equipment employed in this test are listed below, and their applicable calibrations are filed and are available for inspection upon request.

Test Equipment	Manufacturer's Name	Serial Number
Instrument Name	Model Number	Laboratory Number
Radiation Distribution Printer	Scientific Atlanta 1803	30
Positioner Programmer	Scientific Atlanta 2004	54
Signal Generator	Hewlett Packard 8614A	343-00209
Signal Generator	Hewlett Packard 612A	1130
Power Meter	Hewlett Packard 4300	252-13036
Microwave Amplifier	Alfred 508	21
Hybrid	Narda 3032	767
Hybrid	Sage 751	500
Directional Coupler	Narda 3022	01179
Attenuator	Weinschell 210-20	90437
Typewriter	IBM	802717
Thermistor Mount	General Microwave N401A	2754
Polarization Positioner	Scientific Atlanta 5613-S36	124
Termination	Bird Termaline 80M	15948
Transit	Bruning 71	

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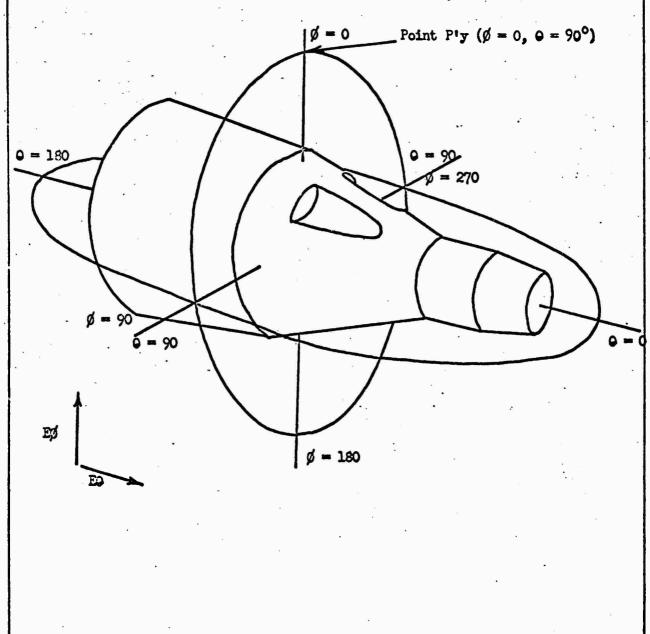
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#### GEMINI CO-ORDINATE SYSTEM

Used in MAC Radiation Laboratory



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CROSSED LOG PERIODIC RECEIVING ANTENNA FOR GEMINI B TESTING







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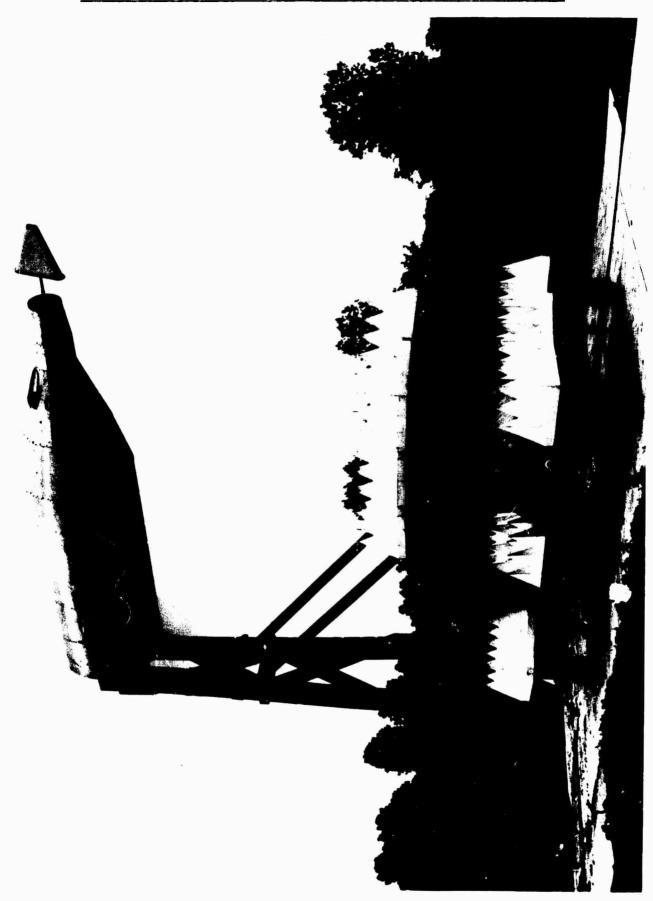
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FIELD PROBE TEST SETUP AT 500 FOOT RANGE WITH GEMINI B WITH MANNED ORBITAL LABORATORY (LOG PERIODIC TEST PROBE ANTENNA)



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1/3 SCALE GEMINI SPACECRAFT SHOWING NOSE STUB ANTENNA WITHOUT NOSE FAIRING AND SPRING



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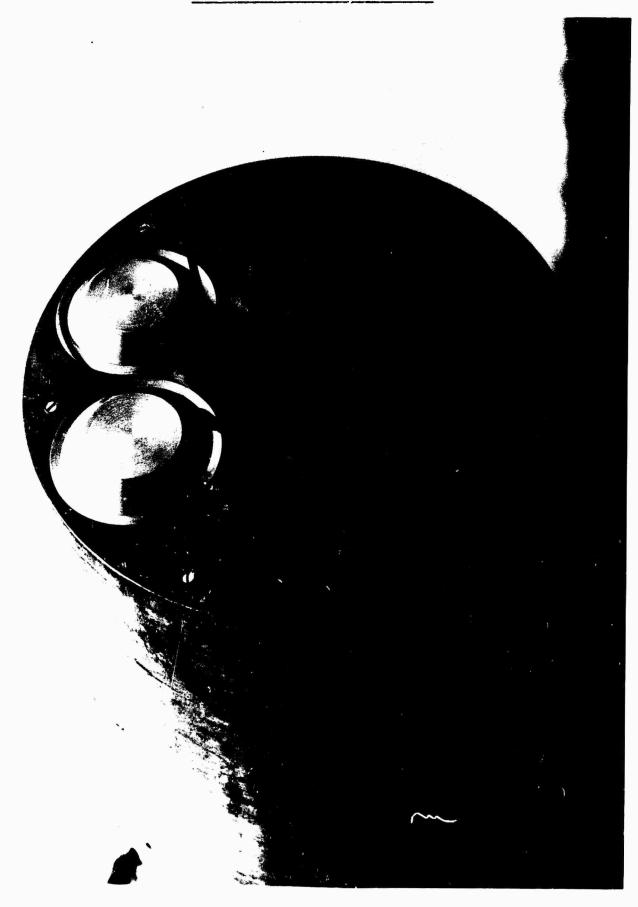
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1/3 SCALE GEMINI SPACECRAFT SHOWING NOSE STUB ANTENNA WITH THE FAIRING SPRING IN PLACE



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NOSE OF 1/3 SCALE GEMINI B SPACECRAFT WITH NOSE FAIRING AND SPRING IN PLACE



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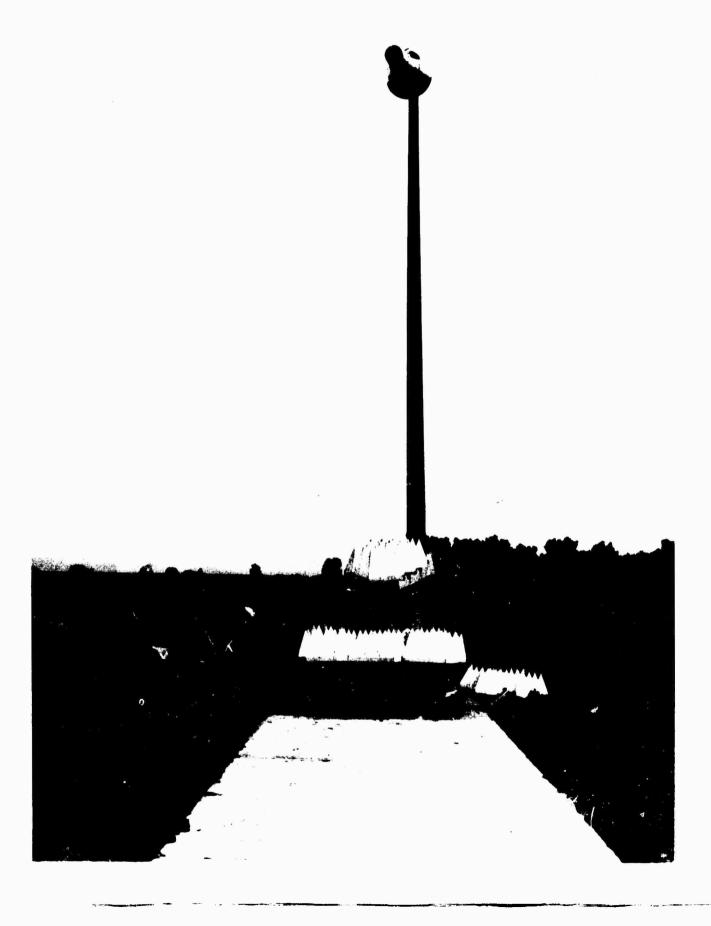
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1/3 SCALE GEMINI B SPACECRAFT ON 24 FOOT MODEL MAST AT END OF 500 FOOT RANGE



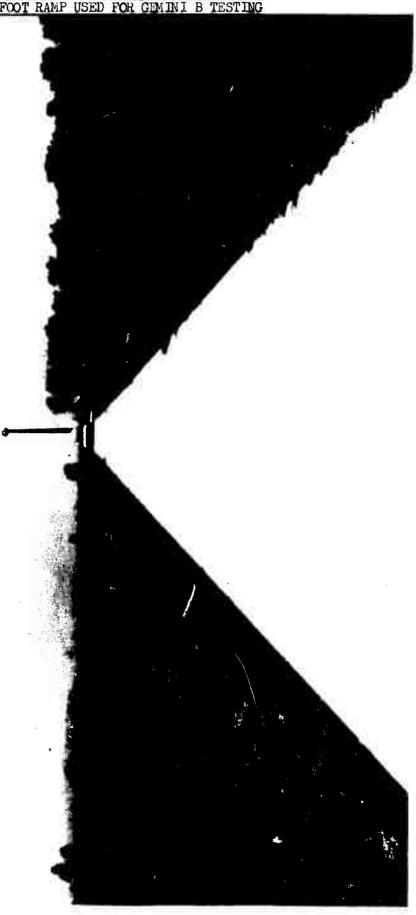
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1/3 SCALE GEMINI B SPACECRAFT SHOWN AT THE END OF THE OO FOOT RAMP USED FOR GEMINI B TESTING



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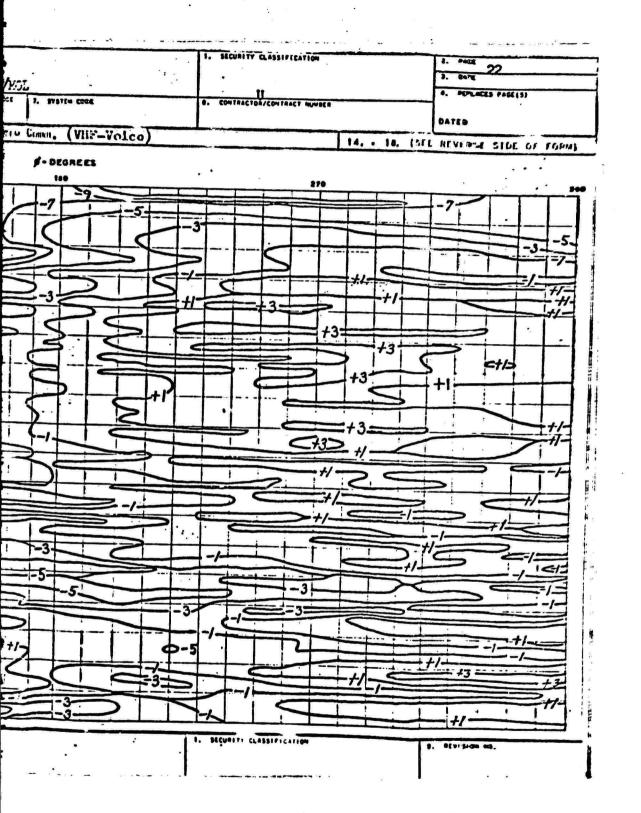
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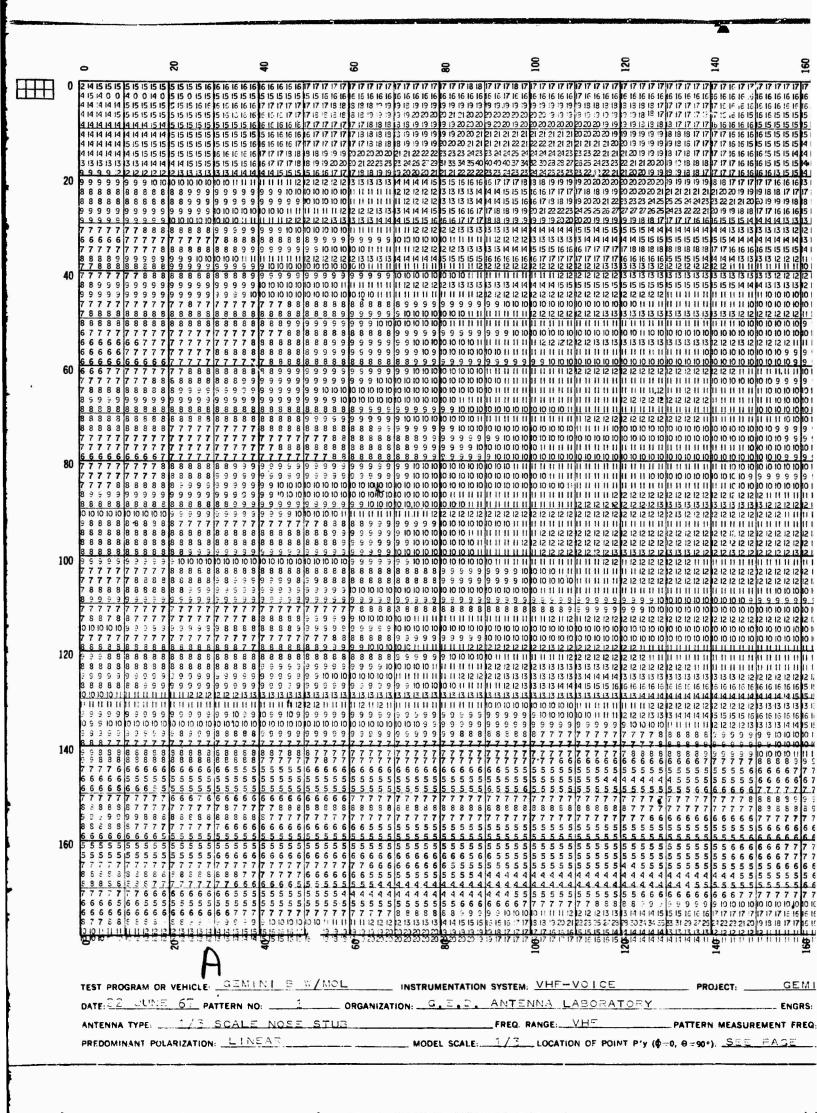
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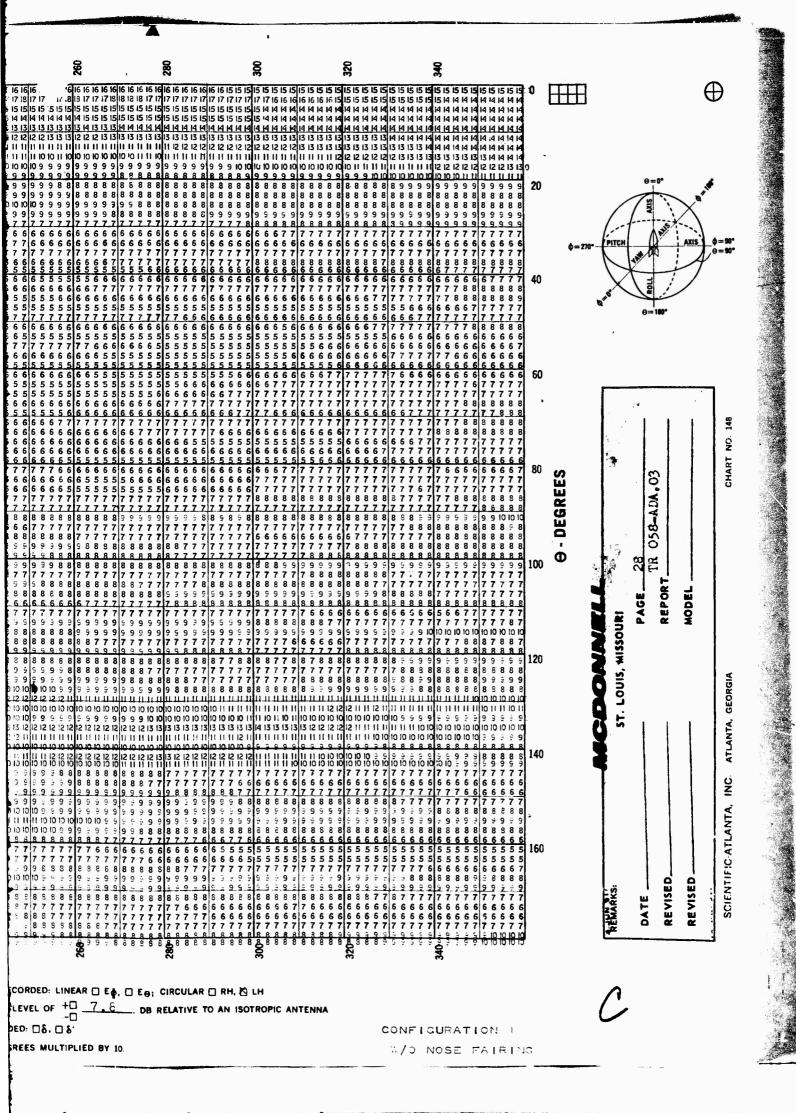
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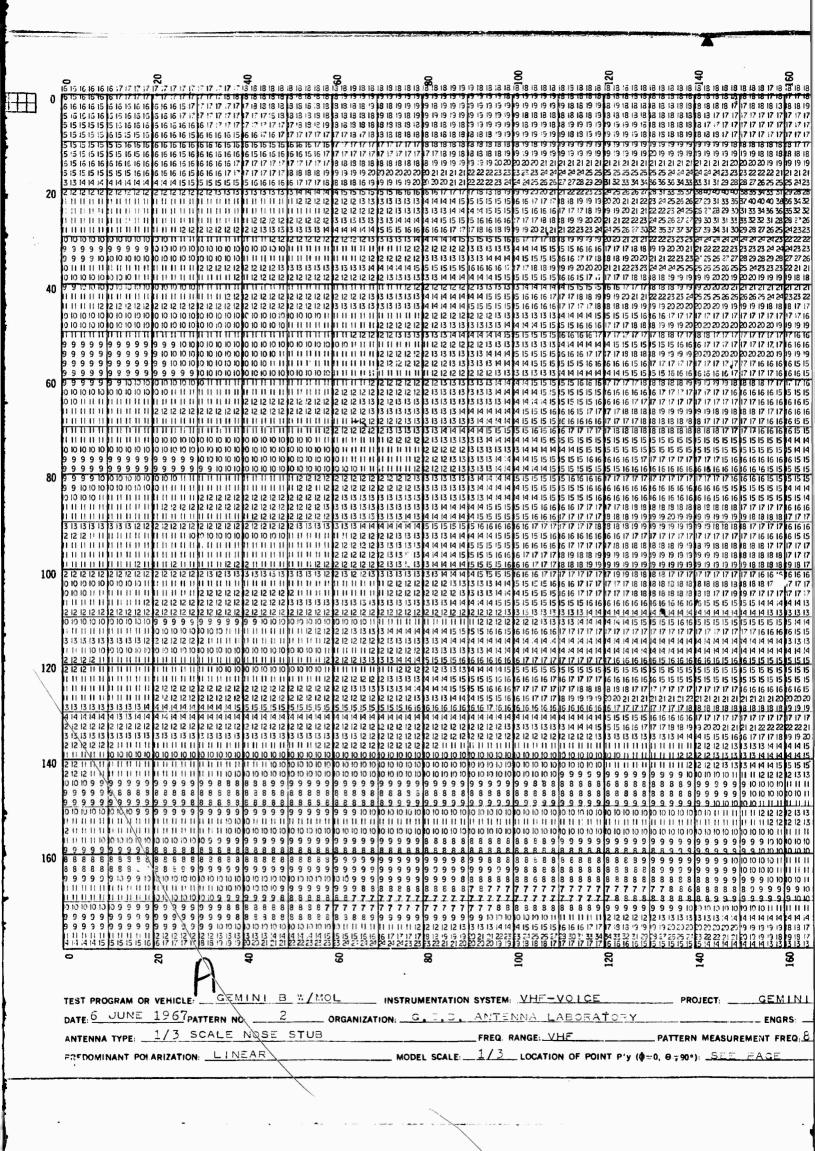
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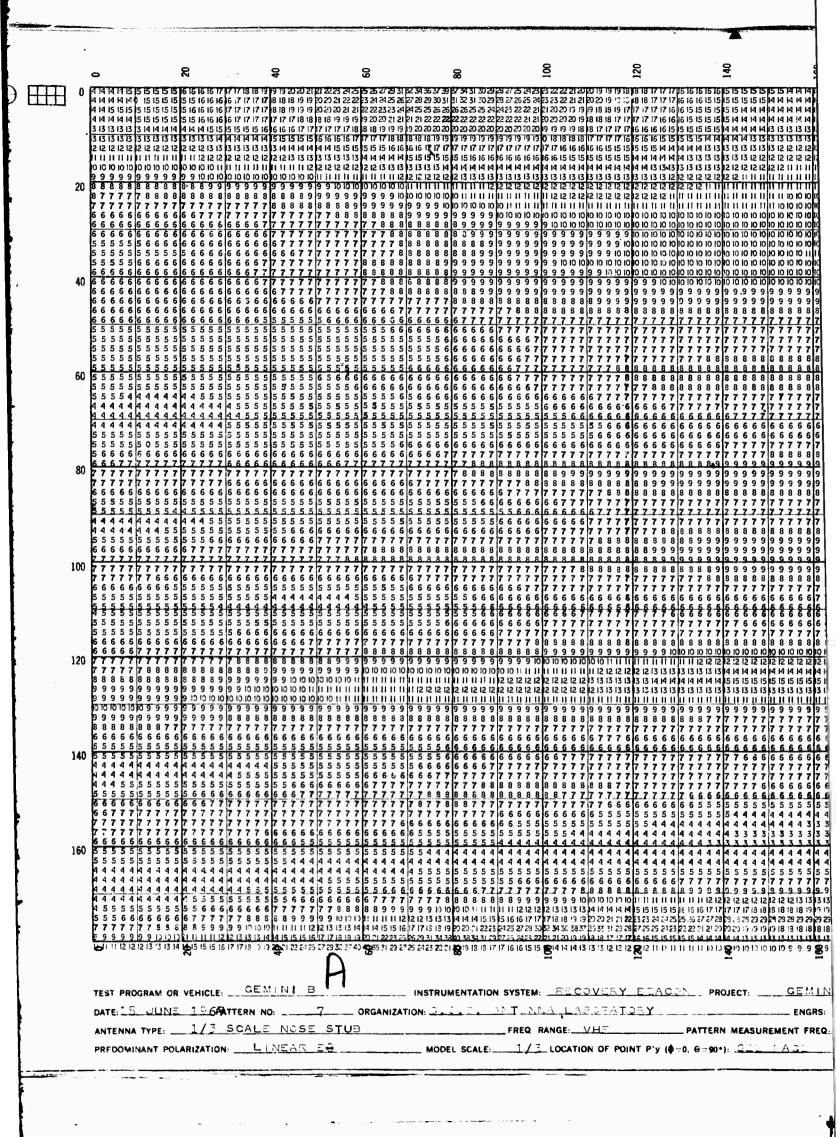
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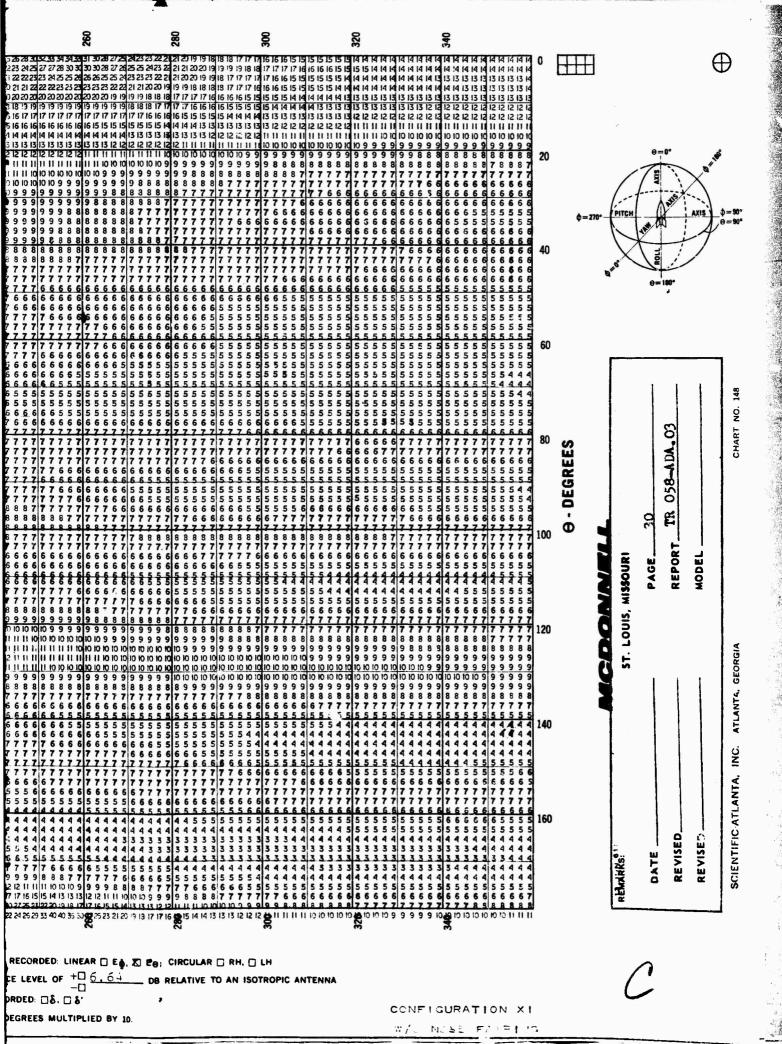


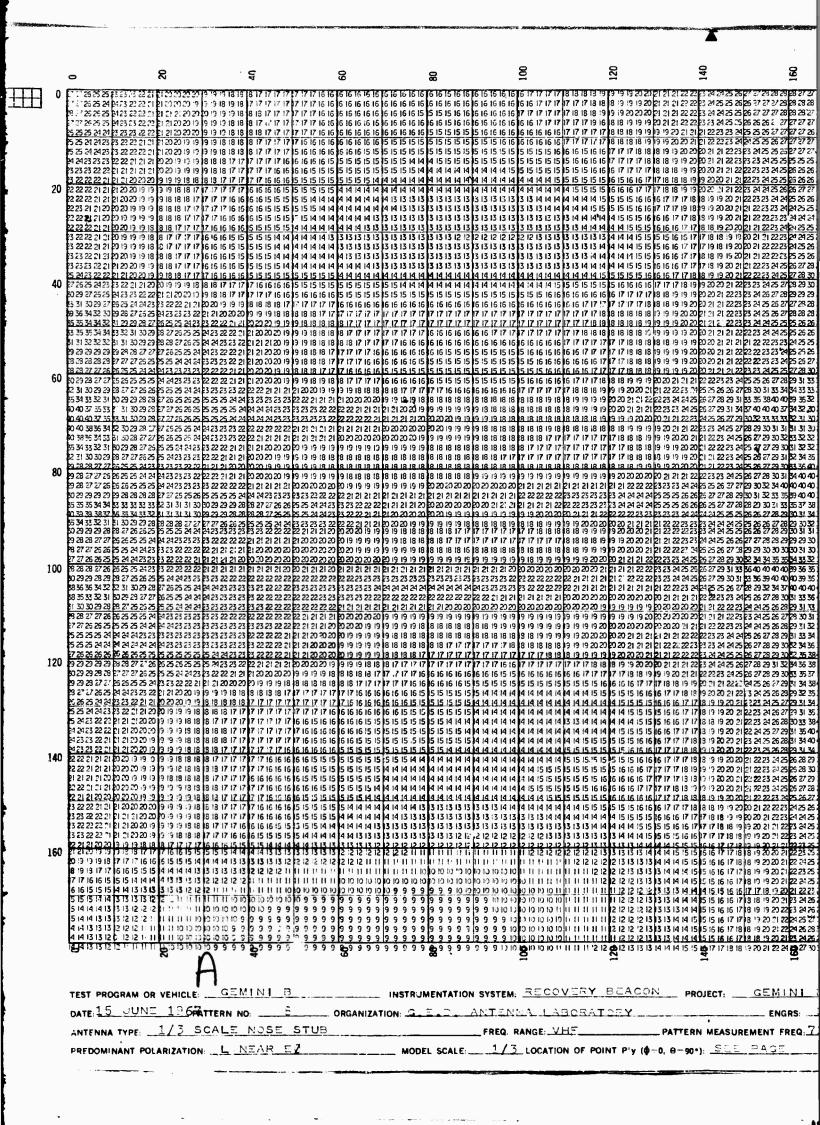
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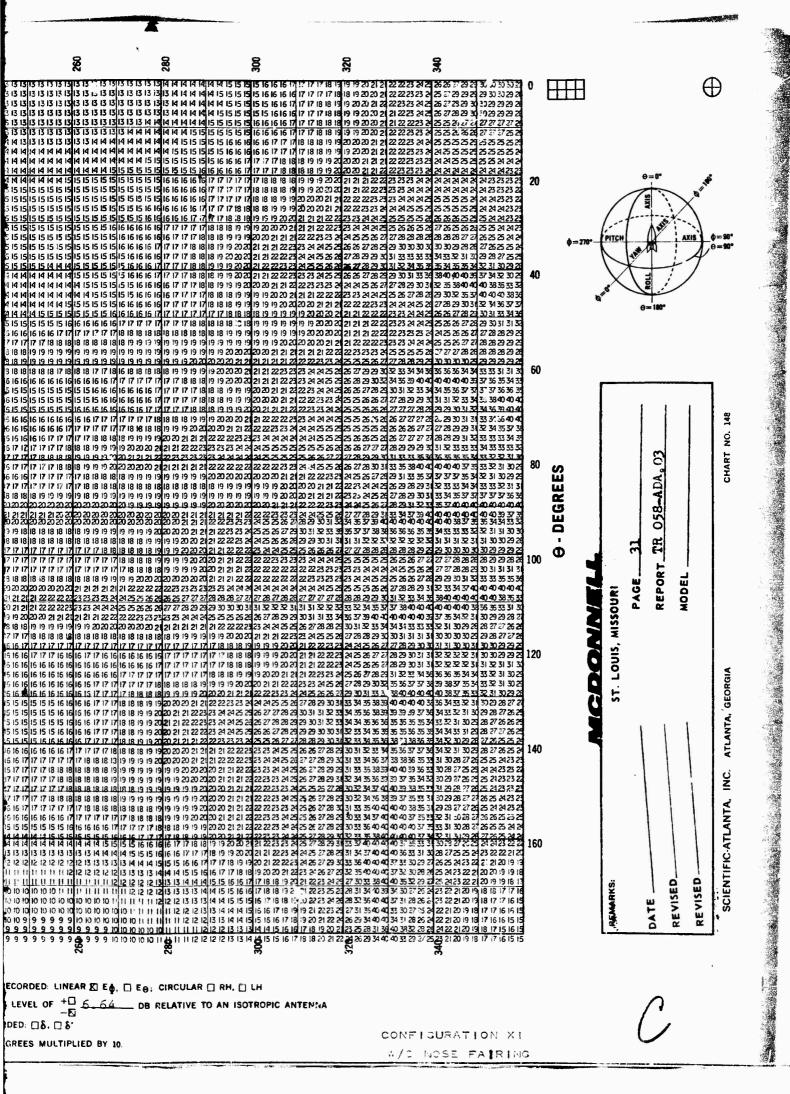


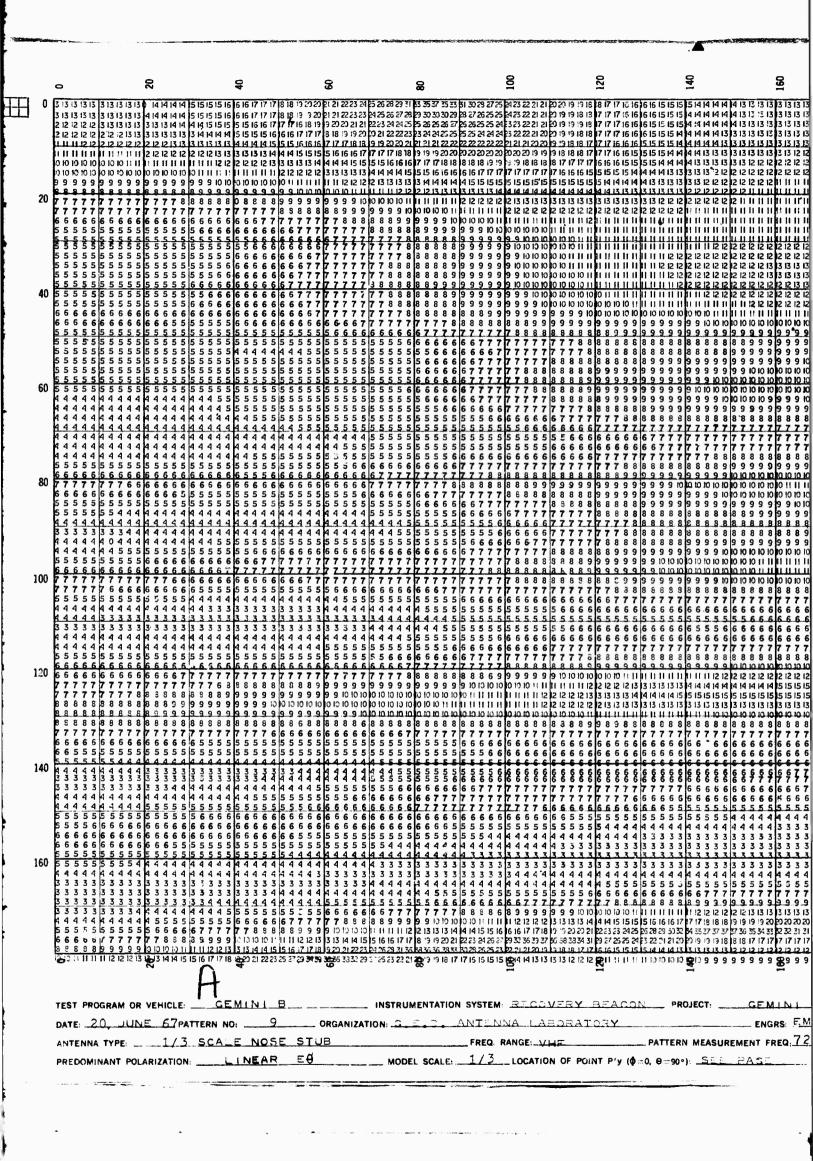
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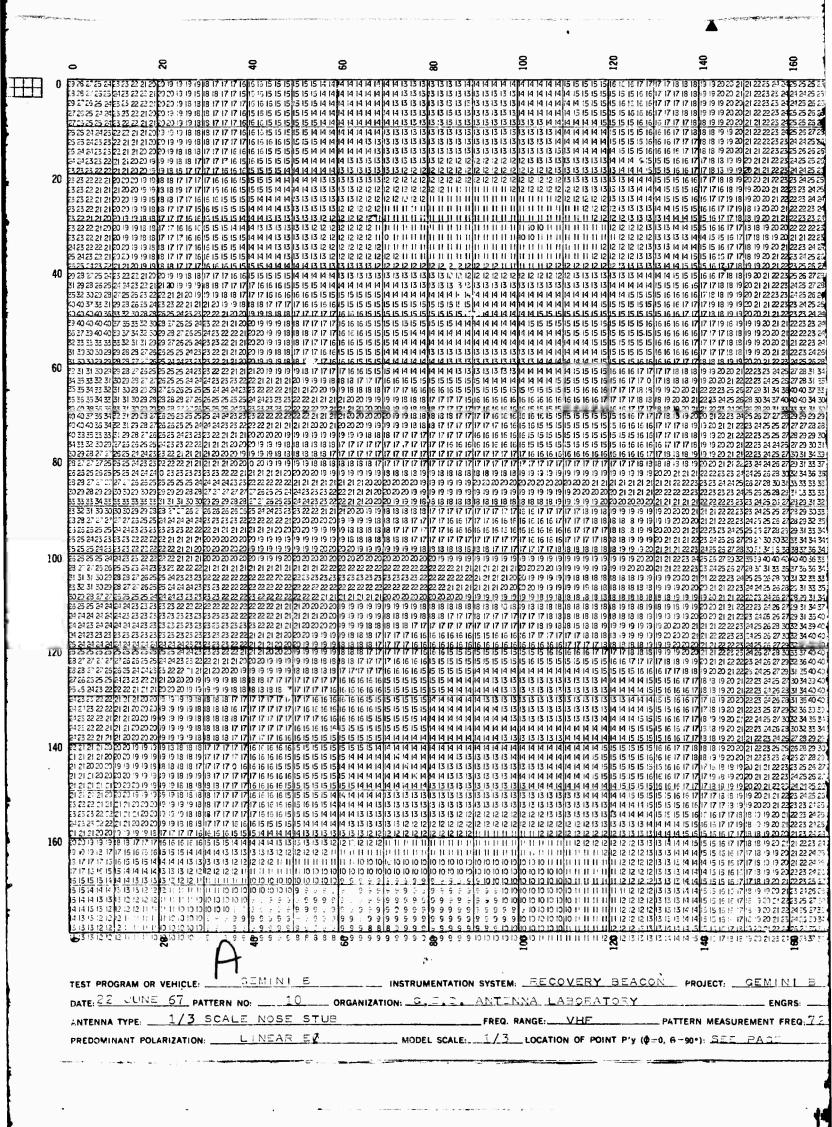
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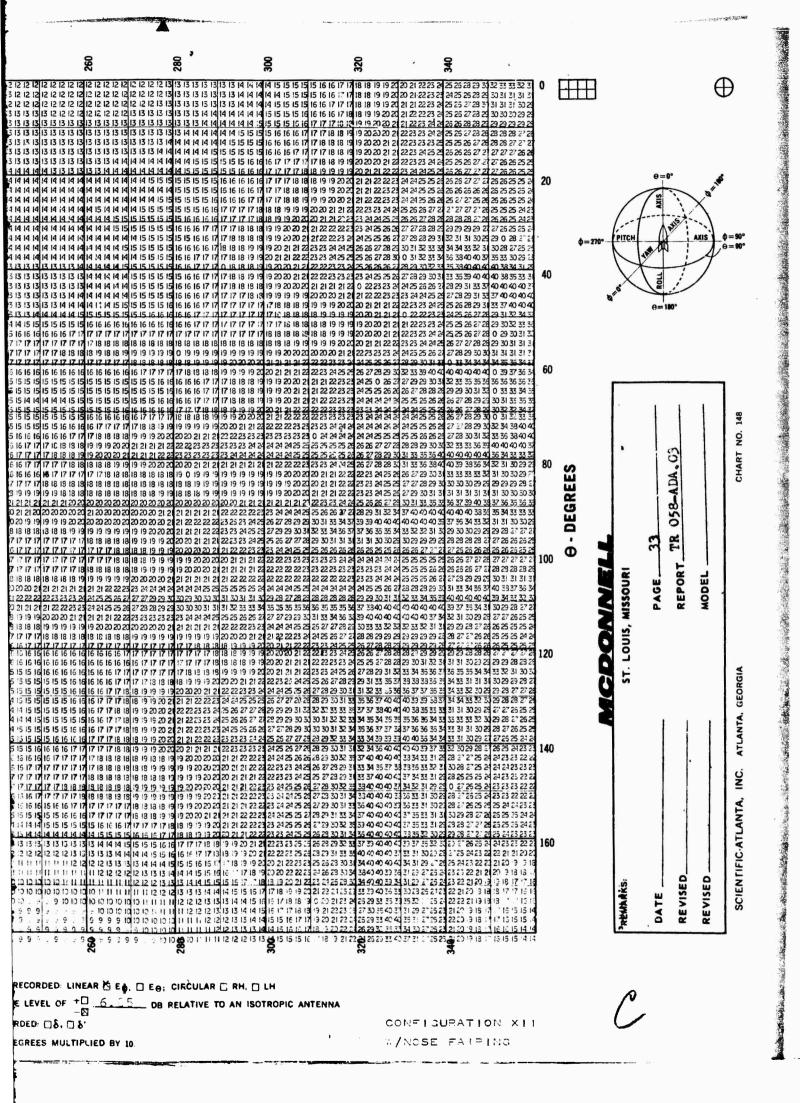


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EVISED	ST. LOUIS MISSOURI	REPORT TR 058-ADA.03
EVISED	ŀ	MODEL 1958
ANTENNA: LOG PERIODIC	(LOLLY POP)	VEHICLE: GEMINI B W/MOL
ANTENNA LOCATION: NOSE	l l	FULL SCALE FREQUENCY: 296.5 m HZ
MODEL SCALE: 1/3		MODEL FREQUENCY: 890.4 Miles
CONFIGURATION: I		

DATE REVISED	MCDONNELL ST. LOUIS, MISSOURI	PAGE 35  REPORT TR 058-ADA.03  MODEL 195B
ANTENNA: NOSE STUB		VEHICLE: GEMINIB W/MOL
ANTENNA LOCATION: NOSE		FULL SCALE FREQUENCY: 296.8 mH;
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REVISED		MODEL	195B
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DATE	RECDONNELL ST. LOUIS, MISSOURI	PAGE 38
REVISED	The Local Property of	REPORT TR 058-ADA, 03
REVISED		MODEL 1958
ANTENNA: NOSE STUR		VEHICLE: GEMIN: P W/MCL
ANTENNA LOCATION: NOSE	·	FULL SCALE FREQUENCY: 2968 N
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		OBSERVER: EM	र cs	DATE: 6-6-67

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MCDONNELL DATE PAGE\_\_\_\_LO ST. LOUIS, MISSOURI REPORT TR 058-ADA.03 REVISED\_\_\_ MODEL 1959 REVISED\_\_\_\_ VEHICLE: GEMINI B WIMOL ANTENNA: NOSE STUR ANTENNA LOCATION: NOSE FULL SCALE FREQUENCY: 296. 8 mHz MODEL SCALE: 1/3 MODEL FREQUENCY: 870.4m Hz CONFIGURATION: I INTEGRATOR COUNT: 1526 OTHER: LHC POLARIZATION:  $E\phi$   $E\theta$ PLOTTED IN: RELATIVE POWER db TRANSMISSION DISTANCE: 500 A. REMARKS: CALIBRATION 3-46 LINE DATE: 6-6-67 OBSERVER: EM C CS

DATE		MCDO ST. LOUIS,		· · ·	
REVISED			4	REPORT TR 0  MODEL 195B	58-ADA.03
ANTENNA: NOSE	STUB			VEHICLE: GEMINI B	WIMOL
ANTENNA LOCATION: NC	SE			FULL SCALE FREQUENCY	1:296.8 mH
MODEL SCALE: 13				MODEL FREQUENCY	1:890.4mHz
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(2)					
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		i j			$\Delta$
				\$\\\ <b>X</b> \\\\	
0 10 15	20 25	30 35	35 30	25 20 15	105
		XXX 1-1-2			
		2			
				$X \parallel \setminus \setminus \setminus \times$	
					<b>X</b>
					<b>Y</b>
~					
					0=30°
			#####		θ= 30° φ=
•				*	Ψ=
CONFIGURATION:	I.		INTEGRATOR CO	UNT: 2252	
	<del></del>		POLARIZATION:		HER: LHC_
				LATIVE POWER db	
REMARKS: CALLED TO		a / luc		DISTANCE: 500 Pl.	
REMARKS: CALIBE	HION -	3 Ob LINE	OBSERVER: EM		TE:6-6-67
MAC 231YL 17 MAY 64			E M	1 C3	K . E C

DATE		PAGE42
REVISED	ST. LOUIS, MISSOURI	REPORT TR 058-ADA.03
EVISED	,	MODEL 195B
ANTENNA MOCE CTUB		VEHICLE: GEMINI B W/MOL
ANTENNA: NOSE STUR ANTENNA LOCATION: NOSE	*	FULL SCALE FREQUENCY: 296.8 m.
MODEL SCALE: Y3		
MODEL SCALE:		MODEL FREQUENCY: 890,4m
	\$ 10	
	215	
	20	
5 10 15 20 2	5 30 35 50	25 20 15 10
		$\theta = 40^{\circ}$ $\phi =$
•		φ=
CONFIGURATION:	INTEGRATOR CO	UNT: 36//
		Eφ Eθ OTHER: LHC
		LATIVE POWER db
REMARKS: CALIBRATION	TRANSMISSION I	DISTANCE: 500 F.F.
ONE IS AN ION	OBSERVER: EM	
MAP SULVI 17 MAY 441	000CIT. E IV	1,7,63

DATE	MICHURARELL	PAGE43
R' (ISED	ST. LOUIS, MISSOURI	REPORT TR 058-ADA.03
REVISED	•	MODEL 195B
Ú		
ANTENNA: NOSE STUB		VEHICLE: GEMINI B WIMOL
ANTENNA LOCATION: NOSE		FULL SCALE FREQUENCY: 296.8 m.H
MODEL SCALE: 1/3		MODEL FREQUENCY: 8904 MH
	P-10	
	≥15	
0 5 10 15 20	25 + 30 - 35	25 20 15 10 5
	70-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	
		θ= 50° φ=
		d=
C CONFIGURATION:	INTEGRATOR CO	DUNT: 3530
	POLARIZATION:	EΦ EO OTHER: LHC
		ELATIVE POWER db
REMARKS: CALIBRATION		DISTANCE: 500 ft

DATE	_ McDonnell	PAGE
REVISED	ST. LOUIS. MISSOURI	REPORT TR 058-ABA.03
REVISED_		MODEL 195B
ANTENNA: NOSE	TUR	VEHICLEGEMINI B W/MOL
ANTENNA LOCATION: N		FULL SCALE FREQUENCY 296, 8 mH
MODEL SCALE: 13		MCDEL FREQUENCY: B904M
		$\theta = 60^{\circ}$
CONFIGURATION: T	INTEGRATOR O	COUNT: 4553
CONFIGURATION: I	POLARIZATION	: Eφ Eθ OTHER:
		RELATIVE POWER db
DEMARKS. A.	ION -346 LINE TRANSMISSION	N DISTANCE: 500 Ft.

REVISED	ST. LOUIS, MISSOURI	REPORT TR 058-AD MODEL 195B
ANTENNA: NOSE STUR		VEHICLEGEMINI B WIN
ANTENNA LOCATION: NOSE		FULL SCALE FREQUENCY: 296
MODEL SCALE: 1/3		MODEL FREQUENCY: 690
	9 10	
	2 3	
	20	
5 10 15 20	25 35 30	25 20 15 1)
	1-10-1-1-10-1-1-10-1-1	
		$\theta$ =
		$\theta = \phi$
CONFIGURATION: I	INTEGRATOR CO	unt: <i>372</i> 3
		$E\phi \square E\theta \square OTHER: \angle$
		LATIVE POWER db
REMARKS: CALIBRATION -	TRANSMISSION I	DISTANCE: 500 Ft.
CALIBRATION	OBSERVER: EM	ECS DATE: 6 -

DATE	MCDONNELL	PAGE 46
REVISED	ST. LOUIS, MISSOURI	REPORT TR 058-ADA.03
REVISED		MODEL 195B
ANTENNA: NOSE STUB		VEHICLE: GEMINI WIMOL
ANTENNA LOCATION: NOSE		FULL SCALE FREQUENCY: 296.Em
MODEL SCALE: 1/3		MODEL FREQUENCY 890,4 m
	8,10	
	≥15	
	20	
	35	
0 5 10 15 20 2	30 35 30	25 20 15 1
		9 630
		θ= 50° φ=
÷		φ=
CONFIGURATION:		UNT: 4314
,	POLARIZATION:	
		LATIVE POWER db
REMARKS: CALIBRATION -3	de LINE TRANSMISSION D	DISTANCE: 500 ft.
	OBSERVER: E N.	9 CS DATE:6-6-67

C

DATE		MISSOURI	
REVISED	ST. LOUIS, MISSOURI	REPORT TR 058-ADA	
REVISED		MODEL 195B	
ANTENNA: NOSE STUR		VEHICLE: GEMINIE WINOL	
ANTENNA LOCATION: NOSE		FULL SCALE FREQUENCY: 296.81	
MODEL SCALE: 1/3		MODEL FREQUENCY 890,4	
	210		
	20		
5 10 15 20	25 30 35 + 35 30	25 20 15 10	
	39		
	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX		
	20-1-1-1		
	10-10-1		
		$\theta = 20$	
		φ <u>=</u>	
CONFIGURATION:	INTEGRATOR CO	UNT: 2642	
		EΦ EΘ OTHER: LH	
		LATIVE POWER db	
REMARKS: CALIBEATION	-3d/ LINE TRANSMISSION I	DISTANCE: 500 F.F	
	OBSERVER:		

DATE		racdo	nnell	PAGE48	
REVISED		ST. LOUIS	MISSOURI	REPORT	058-ADA.03
REVISED	-		*	MODEL_19	95B
ANTENNA: NOSE	TUR			VEHICLE GE MINI	B WINOL
ANTENNA LOCATION: N	OSE			FULL SCALE FREQUEN	104:296.8mH
MODEL SCALE: 1/3					NCY: 89014 MH
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			111		
					0 445
					$\theta = 1/0$
					θ= // <i>0</i> Φ=
CONFIGURATION:	I.		INTEGRATOR COL	JNT: 3255	
CONFIGURATION			1		OTHER: LHC
			PLOTTED IN: REL		
REMARKS: CLLIBRAT	10N -3-	16 11NF	TRANSMISSION D	ISTANCE: 500	
Ur El BRAT	<u> </u>		OBSERVER: EM		DATE: 6-6-67

REVISED.	MCDONNELL ST. LOUIS, MISSOURI	PAGE 49  REPORT TR 058-ADA 03  MODEL 195B
ANTENNA: NOSE STUB  ANTENNA LOCATION: NOSE  MODEL SCALE: 13		VEHICLE: GEMINI B WIM
WODEL SCALE: IS		MODEL FREQUENCY SQUITE IN THE PROPERTY OF THE
CONFIGURATION:		UNT: 2726 ΕΦ
REMARKS: CALLERATION -		DISTANCE: 500 ff

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ANTENNA: NOSE STUB  ANTENNA LOCATION: NOSE  FULL SCALE FREQUENCY: 296.8	REVISED	MCDORNELI ST. LOUIS, MISSOURI	PAGE 50 REPORT TR 058-ADA.C
MODEL SCALE: 13  MODEL FREQUENCY: \$570.4			FULL SCALE FREQUENCY: 296.8
	MODEL SCALE: 13	an bismod shirty says a second state of the se	
* * * * * * * * * * * * * * * * * * *		35 35 35 35 35 35 35 35 35 35 35 35 35 3	
CONFIGURATION: INTEGRATOR COUNT: 1336	CONFIGURATION: I	POLARIZATION PLOTTED IN:	I: Eφ Eθ OTHER: LHC
POLARIZATION: EΦ Eθ OTHER: LH C	REMARKS: CALIERATION -		
POLARIZATION: EΦ Eθ OTHER: LINE  PLOITED IN: RELATIVE POWER db  TRANSMISSION DISTANCE: 500 ff		OBSERVER:	EMECS DATE: 6-6-

REVISED	MCDONNELL ST. LOUIS, MISSOURI	REPORT TR 058-ADA.03
ANTENNA: NOSE STUR		MODEL 1958  VEHICLE GE NINI B W/MC
ANTENNA LOCATION: NOSE		FULL SCALE FREQUENCY: 296. 13 Y
MODEL SCALE: 1/2		MODEL FREQUENCY 890.4 M
	25 25 25 25	$\theta = 20$
CONFIGURATION:	INTEGRATOR	COUNT: 2986
	POLARIZATION	N: $E\phi \square E\theta \square$ OTHER: $\angle H \subset$
		RELATIVE POWER db
REMARKS: CALLERATION -5	TRANSMISSIO	n distance: 500 ft
I WHITEKALON TO	AD LIVE	<u> </u>

REVISED	MCDORNELL ST. LOUIS, MISSOURI	PAGE 52  REPORT TR 058-ADA.(
ANTENNA: NOSE STUR		VEHICLEGEMINI B WINC
ANTENNA LOCATION: NOSE		FULL SCALE FREQUENCY: 296.80
MODEL SCALE: Y3		MODEL FREQUENCY: 890,4 V
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	8	
	20	
	2.	
	35	
0 5 -10 -15 - 20 -25	30 35 + 35 30	25 20 15 10 5
		θ=/5 φ=
		φ=
CONFIGURATION:	INTEGRATOR CO	OUNT: 4674
	POLARIZATION:	OUNT: 4674 ΕΦ ΕΘ ΟΤΗΕR: LH
	PLOTTED IN: RE	LATIVE POWER db
REMARKS: CALIBRATION - P	TRANSMISSION	DISTANCE: 500 FK
CHEIR KITTON - S	OBSERVER:	
MAC 251YL (7 MAY 64)		* * * * * * * * * * * * * * * * * * *

ATE	<del></del>		Pur la la la la	PAGE 53	
EVISED		ST. LOUIS, MISSOURI		REPORT TR 058-ADA.03	
REVISED				MODEL 1958	
	<del></del>		<u> </u>		
ANTENNA: NOSE				VEHICLE: GEMINI	3 WIMCL
ANTENNA LOCATION:_	NOSE	···	<del></del>	FULL SCALE FREQUENCY	v. 296 8 m Hz
MODEL SCALE: Y	3		111111111111111111111111111111111111111	MODEL FREQUENCY	v:090,4 m Hz
				HAARA AMARA	
$(\ddot{\circ})_{\lambda}$					*
		37			`
		\$ The state of the			<b>&gt;</b>
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			20		
		<b>XXXXX</b>			
				出事出計量	
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			· HITT		
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×			10		
				THE THE PARTY OF T	0=160°
	~				θ=/60° φ=
CONFIGURATION:	I		INTEGRATOR COU	NT: 5292	
<del></del>			POLARIZATION:	NT: 5292 Φ	HER: / HC
			PLOTTED IN: REL	ATIVE POWER db	
REMARKS: On the o	A771A11 - 2	alla Lunt	TRANSMISSION D	STANCE: 500 FA	
REMARKS: CALLER	WITON -2	OPLINE	OBSERVER: EM		NTE:6-6-67
			1 E/VI	الما من المنا	6-6-/

MAC 231YL 17 MAY 641

K & E CO.

DATE	MCDONNELL St. LOUIS, MISSOURI	PAGE54
REVISED		REPORT TR 058-ADA.03
ANTENNA: NOSE STUB		VEHICLEGEMINI 3 W/MOL
ANTENNA LOCATION: NOSE		FULL SCALE FREQUENCY 296.8 MH
MODEL SCALE: 1/3		MODEL FREQUENCY: 890 4 MH
	5-10	
	215	
	20	
	XXXX 25-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	
		XXX
		1
0 5 10 15 20 25	30 35 35 30	25 20 15 10 5
		XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
	人工工工工工人	
		θ=170
		θ=/70 φ=
CONFIGURATION:	INTEGRATOR COL	UNT: 4650
	POLARIZATION:	EΦ Eθ OTHER: LHC
was a did to be a second of the second of th		ATIVE POWER db
4	l l l l l l l l l l l l l l l l l l l	
REMARKS: CALIBRATION -34	TRANSMISSION D	PISTANCE: 500 ff

DATE	McDurnell	PAGE 55
REVISED	ST. LOUIS, MISSOURI	REPORT TR 058-ADA 03
REVISED		MODEL 195B
ANTENNA: NOSE STUB		VEHICLE: GEMINI B WINOL
ANTENNA LOCATION: NOSE		FULL SCALE FREQUENCY: 296.8 MHZ
MODEL SCALE: 1/3		MODEL FREQUENCY 8904 MH
	3	
	Į į	
	335	
0 5 10 15 20 25	30 35 35 30	25 20 15 10 5
		9=/80°
		Ø=
CONFIGURATION:	. INTEGRATOR CO	UNT: 1936
	POLARIZATION:	EΦ EΘ OTHER: LHC
		LATIVE POWER db
REMARKS: CALIBRATION -34	6 /INE TRANSMISSION I	DISTANCE: 500 F.
<u> </u>		

## RICOORINGLL

ST. LOUIS, MISSOURI

PAGE	56
	TR OSE-ADA OS

REVISED .

MODEL 195B

## ISOTROPIC CALCULATION

I<sub>2</sub> = Count for calibration radius = 10,000

For Electronic Integrator and

K = 2 = 0.63662  $KI_2 = 6366.2$ 

db Recording

KI2 = Power Ratio

10 Log10 Power Ratio = Istropic db below calibration

A = Integrator Count Recorder Chart Level for calibration | - 3 db

CONFIGUR.	ATION	<u> </u>				
sin 0	8	A Pol.	A, Pol.	A Pol.	A Pol.	6
0.17365	100	0739		4650		1700
0.34202	20°	1526		52.92	÷	1600
0.50000	30°	2252		4674	,	1500
0.64279	140 <sub>0</sub>	3611		2986		1400
0.76504	50°	3530		1336		1300
0.86603	60°	4553		2726		1200
0.93969	70.0	3723		3255		1100
0.98481	800	43/4		2642		1000
1.00000	900	2999				

$$\sum_{180}^{0} (A_{9} \sin \theta + A_{9} \sin \theta) \frac{37409.06}{409.06} \Rightarrow 18 = I_{1} \frac{2.078.28}{2.078.28}$$

$$\frac{6366.2}{I_1} = Power Ratio \underline{3.06}$$

Isotropic = 10 Log<sub>10</sub> Power Ratio = 4.86 db Below calibration level

Isotropic Chart Level = - 286 db

SRED. 890.4-MHZ W/O FAIRING

DATE		I NI Galladia	PAGE57		
REVISED	ST. LOUIS, M	ST. LOUIS, MISSOURI		REPORT TR 058-ADA.03	
REVISED			MODEL 195		
ANTENNA: NOSE STUR			VEHICLE:GEMINI B	3 WIMOL	
ANTENNA LOCATION: NOSE			FULL SCALE FREQUENC	v.296.8 mHz	
MODEL SCALE: 1/3			MODEL FREQUENC	Y890.4 m Hz	
			A		
	1				
- 20					
	2-10-				
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	3				
	20-				
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		111111111111111111111111111111111111111	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX		
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	<b>XXXXX</b>				
				K	
			开车		
0 5 10 15 20 2	53035	35 30	25 20	10 5	
	351				
		XXXXX	STATE OF		
9		田北	XXX		
	25				
		HETE TO			
	20-	1-1-1		X	
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	X Yalis	MW			
	WIN.			<b>)</b>	
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		并三十二十		φ= 0°	
ISOTROPIC LEVEL-	10.96 db			Ψ- υ	
CONFIGURATION: TE		INTEGRATOR COUN			
VHF VOICE W/NOSE F	7.12 NS	POLARIZATION: E	Εθ 01	HER: / HC	
7111		PLOTTED IN: RELA		,,, <del>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</del>	
REMARKS: CALLED TO	W-3 45 LINE	TRANSMISSION DIS	TANCE: 500 11.		
		OBSERVER: EM		ATE: 6-6-6-7	
MAC 231YL 17 MAY 641			(	K & E CO.	

DATE	MCDONNELL	PAGE 58
REVISED	ST. LOUIS, MISSOURI	REPORT TR 058-ADA.03
REVISED		MODEL 195B
<b></b>		
ANTENNA: NO SE STUR	and the second s	VEHICLE GEMINI B WIMOL
ANTENNA LOCATION: NOSE		FULL SCALE FREQUENCY: 296.8 M H2
MODEL SCALE: 1/3		MODEL FREQUENCY 890.4 MM HZ
	5	
	3	
		0 900
		θ= 90°
ISOTEOPIC LEVEL -		Ø=
		UNT: 1511
		EΦ Eθ OTHER: LHC
ATE VALLE WINSELFA		
		LATIVE POWER db
REMARKS: CALIBRATION -3		DISTANCE: 500 CH.
	CBSERVER: EM	
MAC 231YL 17 MAY 640		K & E CO.

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REVISED	MCDONNELL ST. LOUIS, MISSOURI	PAGE 59  REPORT TR 058-ADA.03  MODEL 195B
O ANTENNA: NOSE STUB	,	VEHICLE: GE MINI B WIMOL
MODEL SCALE: 1/3		FULL SCALE FREQUENCY:296.8 mH2.  MODEL FREQUENCY:590A mHZ
	e 10 0 0 0 0	
	25	
	35	
JOOTROPIC LEVE	-10.94 7h	$\theta = \phi = 90^{\circ}$
( ) CONFIGURATION: II  VIIT VOICE WINSEE F.	INTEGRATOR C POLARIZATION:	OUNT:  E φ
REMARKS: CALEFATIO		DISTANCE: 500 17

DATE	MCDONNELL	PAGE 60
REVISED	ST. LOUIS, MISSOURI	REPORT TH 058-ADA.03
REVISED	·	MODEL 195B
ANTENNA: NOSE STUB		When
		VEHICLE: GEMINI B WIMOL
ANTENNA LOCATION: NOSE MODEL SCALE: 13		FULL SCALE FREQUENCY: 296.8 MH
MODEL SCALE: 13		MODEL FREQUENCY: 890.4 m
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	, and the second	
	20	
	35	
	333333333333333333333333333333333333333	23 20 3 10
	30	
	20	
	10	
To the second se		$\theta = 0^{\circ}$
		$\theta = 0^{\circ}$ $\phi =$
CONFIGURATION: 7	· INTEGRATOR COL	
CONFIGURATION: J.		Eφ Eθ OTHER: LHC
	PLOTTED IN: REL	
REMARKS: AA A A		DISTANCE: 500 ft
REMARKS: CALIR RATION	UBSERVER: EM	
NAC 231YL 17 MAY 641		KAEG

DATE	MCDONNE	PAGE 61
REVISED	ST. LOUIS, MISSOURI	REPORT
REVISED		MODEL 195B
ANTENNA: NOSE STUR	· · · · · · · · · · · · · · · · · · ·	VEHICLE: GEMINI B W/MC
ANTENNA LOCATION: NOSE		FULL SCALE FREQUENCY: 296.8m
MODEL SCALE: 1/3		MODEL FREQUENCY 890 4 12
MODEL SONEL.		MODEL PREGOENCY STATE
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	\$ 10	
	o l	
	25-17	
	135	
0 5 10 15 20	25 30 35 35	30 25 20 15 10 5
	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	
	20-1-	
	WHI THE WAR	$\theta = 10^{\circ}$ $\phi =$
		φ=
CONFIGURATION: TT	INTEGR	
CONFIGURATION: I	POLARIZ	ATOR COUNT: 0477  ATION: EΦ ΕΘ OTHER: ΔΗΣ
	PLOTTE	D IN: RELATIVE POWER db
REMARKS:		lission distance: 500 ff
REMARKS: DAY SANTICH - 3		ER: EMECS DATE: 6.6
MAC 291YL (7 MAY 64)	OCOLINA	EWdC2 Surfering

EVISED	RECDONNEL ST. LOUIS, MISSOURI	PAGE 62  REPORT TR 058-ADA, 03  MODEL 195B
ANTENNA: NOSE STUR		VEHICLEGEMINI B W/MOL
ANTENNA LOCATION: NOSE	·	FULL SCALE FREQUENCY: 2968 MH
MODEL SCALE: 1/3		MODEL FREQUENCY STO. 4 mil
(9)		
	5	
	6	
	30 35	
	25	
	11-1-15	
	10-1-10	
		$\theta = 30^{\circ}$ $\phi =$
40		7
		Φ=
CONFIGURATION: II	INTEGRATO	OR COUNT: 07/2
<u> </u>	POLARIZAT	ION: Eφ Eθ OTHER: LHC
		N: RELATIVE POWER db
REMARKS: a		sion distance: 500 ff
REMARKS: CALIBRATION -3	16 LINE	300+7

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DATE		PAGE63
REVISED	ST. LOUIS, MISSOURI	REPORT TR 058-ADA.03
REVISED		MODEL 1958
ANTENNA: NOSE STUR		VEHICLE GEMINI R WIMOL
ANTENNA LOCATION: NOSE		FULL SCALE FREQUENCY: 296,8 MHZ
MODEL SCALE: 1/3		
MODEL SCALE: 13		MODEL FREQUENCY BOOM HE
	\$ 1 S	
	8 1	
		XXX///X///X
	20-20-	
		XXXX
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0 5 20	25 30 35 35 50	25 20 15 10 5
	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	
	15 17	
	10-11	
		θ= 30°
	(新国)	0=20
		φ=
CONFIGURATION	WITCONTO D	MIAIT. 1021
CONFIGURATION: J	INTEGRATOR CO	DUNT: 1066
		EΦ EΘ OTHER: LHC
		ELATIVE POWER db
REMARKS: CALIBRATICH	-346 LINE TRANSMISSION	DISTANCE: 500 FF
LABORATION	OBSERVER: EN	
MAG 231YL (7 MAY 04)	Li	Karco
and the same of th		20 = = =

DATE	MCDONNELL	PAGE 64
REVISED	ST. LOUIS, MISSOURI	REPORT TR 058-ADA 03 MODEL 195B
ANTENNA: NOSE STUB ANTENNA LOCATION: NOSE		VEHICLE GEMINI B W/NO.  FULL SCALE FREQUENCY: 296.8 MHZ
MODEL SCALE: 1/3	S S S S S S S S S S S S S S S S S S S	MODEL FREQUENCY STOP IN HZ
	25	
		θ= 40° φ=
CONFIGURATION:	INTEGRATOR COUL POLARIZATION: E	NT: 16 4 OTHER: LHC
REMARKS: CLLE PUTTON -3	PLOTTED IN: RELA	STANCE: 500 FF

. سو	REVISED	MCDONNELL ST. LOUIS, MISSOURI	PAGE 65 REPORT TR 058-ADA.03 MODEL 195B
	ANTENNA: NOSE STUR		VEHICLEGE MINIE WINOL
	ANTENNA LOCATION: NOSE		FULL SCALE FREQUENCY: 296.8 MHZ
	MODEL SCALE: 1/3		MODEL FREQUENCY 890 Am HZ
		9	
		¥15	
		20	
_ ( )_	0 5 0 15 20 2	5 30 35 35 30	25 20 15 10 5 0
		MALIAN	
			A50°
			θ=50° φ=
			φ=
. 6	CONFIGURATION: TL	INTEGRATOR COL	INT: 1702
C		POLARIZATION:	EΦ Eθ OTHER:
		PLOTTED IN: REL	
	REMARKS: CALIBRATION - 3	TRANSMISSION D	ISTANCE: 500 FA
	CARLOT NATION - 139	OBSERVER: EM	
	HAC 231YL 17 MAY 641		K & E CO.

REVISED	ST. LOUIS, MISSOURI	PAGE 66  REPORT TR 058-ADA.03  MODEL 195B
ANTENNA: NOSE STUR ANTENNA LOCATION: NOSE MODEL SCALE:  O  O  O  O  O  O  O  O  O  O  O  O  O		VEHICLE: GENINI R WINCL  FULL SCALE FREQUENCY: 296. 8 MHZ  MODEL FREQUENCY 90.4 MHZ
CONFIGURATION: T	POLARIZATION:	OUNT: $2/99$ $E\phi \Box E\theta \Box OTHER: LHC$ CLATIVE POWER db
REMARKS: CALIBRATION -	TRANSMISSION OBSERVER: EA	DISTANCE: <u>500 FF</u> 1 \$ CS DATE: 6-6-57

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REVISED		ST. LOUIS, MISSOURI	PAGE 67 REPORT TR 058-ADA.03 MODEL 195B
ANTENNA: NOSE ANTENNA LOCATION: MODEL SCALE:	NOSE		VEHICLEGE MINI B WIMOL  FULL SCALE FREQUENCY: 296.8 MM  MODEL FREQUENCY: 290.4 MM $\theta = 70^{\circ}$ $\phi =$
CONFIGURATION:	JĽ	POLARIZATION: E	INT: //53 ΕΦ ΕΘ OTHER: LIK
REMARKS CALIFIER	tion-31	PLOTTED IN: REL	ative power db istance: 500 ff.

DATE	MICDO		PAGE_68	
REVISED	ST. LOUIS.	missouri	REPORT TR 05	-
		···		
ANTENNA: NOSE STUR	<del></del>	<del></del>	VEHICLE: GENINI B	
ANTENNA LOCATION: 105F			FULL SCALE FREQUENCY:	
MODEL SCALE: 1/3			MODEL FREQUENCY	SYCA MID
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CONFIGURATION:		INTEGRATOR CO	DUNT: 2//8	-
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			LATIVE POWER db	
REMARKS CALIBRATION -	2 db LINE		DISTANCE: 500 Ft.	
		OBSERVER: E N	LECS DATI	6-6-67

DATE	MCDORNELL	PAGE 69	
REVISED	ST. LOUIS, MISSOURI	REPORT TR 058-ADA.C3	
REVISED		MODEL 195B	
ANTENNA: NOSE STUR		VEHICLEGEMINI B WIMOL	
ANTENNA LOCATION: NOSE		FULL SCALE FREQUENCY: 2968 MHZ	
MODEL SCALE: 73	0:111		
MODEL SCALE: 15		MODEL FREQUENCY SOA MHZ	
		$\theta = 100^{\circ}$ $\phi =$	
CONFIGURATION: TE	INTEGRATOR COL	UNT: /38/ EΦ [ ] EΘ [ ] OTHER: LHC	
		LATIVE POWER db	
REMARKS: AA		DISTANCE: 500 ff	
REMARKS: CALIBERATION -S.			
MAC 251YL (7 MAY 64)	OBSERVER: EN	SCS DATE: 6-67	

DATE	MCDORNELL	1770-19
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REVISED	:	MODEL 195B
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ANTENNA: NOSE STUB		VEHICLE: GENINI B WILLOL
ANTENNA LOCATION: NOSE		FULL SCALE FREQUENCY: 296. 8 rat
MODEL SCALE: 1/3		MODEL FREQUENCY STOAM
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CONFIGURATION:	INTEGRATOR C	OUNT: /6.35  ΕΦ ΕΘ ΟΤΗΕR: LHC
	POLARIZATION	EP ED OTHER: LHC
		ELATIVE POWER db
REMARKS: CALIBRATION -346		I DISTANCE: 500 FK
	OBSERVER: ET	MECS DATE: 6-6-67

DATE	MCDONNELL	PAGE 71
REVISED	ST. LOUIS, MISSOURI	REPORT TR 058-ADA.03
REVISED		MODEL 195B
ANTENNA: NOSE STUR		VEHICLES F MINI B WIMOL
MODEL SCALE: 1/3	0	FULL SCALE FREQUENCY: 296 5 A H
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CONFIGURATION: IL	INTEGRATOR CO	DUNT: 1367
	POLARIZATION:	DUNT: /367 ΕΦ ΕΘ OTHER: ///2.
		ELATIVE POWER db
REMARKS: CALLE EXTICH - 2	db TRANSMISSION	DISTANCE: 52-5 CH
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KAG 231YL 17 MAY 640		Kac

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REVISED		MODEL 195B
NEVIOLD		INIODEL
ANTENNA: NOSE STUR		VEHICLE: GEMINI B WINOL
ANTENNA LOCATION: NOSE		
		FULL SCALE FREQUENCY: 296. 9 10.
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CONFIGURATION: J.	INTEGR	ATOR COUNT: 0 7377 ZATION: EØ EO OTHER: LIC
	PLOTTE	D IN: RELATIVE POWER db
REMARKS: CALLE BATTLON -	TRANSI	dission distance: 500 f.t.
No Filed and A. D. Andrewson and A. Andrewson	OBSERV	ER: EN SOS DATE: 6-1-7
MAC 231YL 17 MAY 640		K & E CO.

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DATE	·RICDONN	PAGE	73
REVISED	ST. LOUIS, MISSO		TR OFF ATA OF
REVISED	1	MODEL	195B
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ANTENNA: NOSE STUR		VEHICLE SE TO	INI B WIMOL
ANTENNA LOCATION: NOSE			UENCY: 296.8 n. Hz
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CONFIGURATION: IT	POL	ARIZATION: EØ E E	OTHER:
		TED IN: RELATIVE FOWER db	LHC
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REMARKS: DALIR: FRATION		ISMISSION DISTANCE: 5004	
	OBSI	ERVER: EMECS	DATE: KAECO.
PIAC ESTYL IT MAY 640			K at & CO.

DATE	MCDONNELL ST. LOUIS, MISSOURI	PAGE 74 TR 058-ADA.03
REVISED		MODEL 195B
ANTENNA: NOSE STUB		VEHICLE: GEMINIE WAY
ANTENNA LOCATION: NOSE		FULL SCALE FREQUENCY 296 S M
MODEL SCALE: 13		MODEL FREQUENCY
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		φ=
CONFIGURATION:	. INTEGRATOR C	OUNT: 2309
CONTIGUIATION.	POLARIZATION:	EΦ E OTHER: LHC
		ELATIVE POWER db
REMARKS: CALIBEATION - E	TRANSMISSION	DISTANCE: 500 ft.
CARLES ALL TOOK		NECS DATE: 6.6.67
MAC 231YL 17 MAY 64F	E1	K • I

DATE	ST. LOUIS, MISSOURI	PAGE 75 REPORT TR 058-ADA.03
REVISED		MODEL 195B
ANTENNA: NOSE STUR  ANTENNA LOCATION: NOSE  MODEL SCALE: 18		HICLE: GENTEN E WINGLE  LL SCALE FREQUENCY: 296 E M HE  MODEL FREQUENCY: 890.4 A: HE
		θ= 260° φ=
CONFIGURATION: IT	INTEGRATOR COUNT:  POLARIZATION: ΕΦ  PLOTTED IN: RELATIV	Eθ Offier: LHC
REMARKS: ONLIE: FATION		ance: 500 ft
MAC 231YL (7 MAY 64)		KAEC

DATE	Micdornell	PAGE 76
REVISED	ST. LOUIS, MISSOURI	REPORT TR 058-ADA.03
REVISED		MODEL 195B
ANTENNA: NOSE STUR		VEHICLEGEMINI E WIMOL
ANTENNA LOCATION: NOSE		FULL SCALE FREQUENCY: 296, 5 m FZ
MODEL SCALE: 1/3		MODEL FREQUENCY STOAT 12
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CONFIGURATION:	INTEGRATOR COL	UNT: 3284-
	POLARIZATION:	EΦ EB OTHER: LHC
		ATIVE POWER db
REMARKS: CALLESTANTON -SA	TRANSMISSION D	DISTANCE: 500 64
State of the state	OBSERVER: FAL	
MAC 231YL 17 MAY 640		K & E CO.

DATE	. MIGDORNELL	PAGE 77
REVISED	ST. LOUIS MISSOURI	REPORT TR 058-ADA.03
REVISED	·	MODEL 195B
ANTENNA: NOSE STUB		VEHICLE: GEMINI B W/MAL
ANTENNA LOCATION: NOSE		FULL SCALE FREQUENCY: 2968 W. H.
MODEL SCALE: 1/3		MODEL FREQUENCY: 5904 M. H
MODEL SCALE: 13		MODEL FREQUENCY:
(2)		
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1		$\theta = 80^{\circ}$
		$\theta = 180^{\circ}$ $\phi =$
CONFIGURATION	INTEGRATOR	
CONFIGURATION:	INTEGRATOR CO	DUNT: 0959 ΕΦ ΕΘ OTHER: LHC
		CLATIVE POWER db
REMARKS: CALIES ATTON	TRANSMISSION	DISTANCE: 500 ff
	OBSERVER: EN	18, CS DATE: 6-6-67

## RICDONNELL

ST. LOUIS, MISSOURI

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MODEL 195B

## ISOTROPIC CALCULATION

I<sub>2</sub> = Count for calibration radius = 10,000

For Electronic Intogrator and db Recording

K = 2 = 0.63662

 $KI_2 = 6366.2$ 

 $\frac{KI_2}{I_1}$  = Power Ratio 10 Log<sub>10</sub> Power Ratio = Istropic db below calibration

A = Integrator Count Recorder Chart Level for calibration -3 db

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0.50000	30°	1066		2309		1500
0.64279	<i>1</i> 100	1641		1512	·	J#00
0.76504	50°	1702	·	0727		1300
0.86603	60°	2199		1367		1200
0.93969	700	1753		1635		1100
0.98481	හුං	2118	·	1281	·	1000
1.00000	900	15-11			•	

$$\sum_{180}^{0} (A_{\theta} \sin \theta + A_{0} \sin \theta) / 232.7.7/ + 18 = I_{1} / 018.2./$$

Isotropic = 10 Log<sub>10</sub> Power Ratio = 7.96 db Pelow calibration level
Isotropic Chart Level = -10.96 db

EED. 890.4-MH= W/FAIRING

MAC 2310 TREV 1 AUG 611

	DATE	<u> </u>	riedo	rivell	PAGE 79	
	REVISED	`,	ST. LOUIS,	MISSOURI	REPORT TR O	58-ADA.03
-	REVISED	<del></del>			MODEL 195B	
	ANTENNA: NOSE ANTENNA LOCATION:	NOSE"		•	VEHICLE: GEMINI B	2968mHZ
0-	MODEL SCALE:	1/3	CONTRACTOR OF THE POWER JOB			$\theta = 0^{\circ}$
$\cdot \cdot_{\tau}$		<u>VII</u>		INTEGRATOR COU		
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	DEMARKS			PLOTTED IN: RELA		
	REMARKS: Ø ≡ RAN	EE HORIZO	W77.L		STANCE: 500 ft.	
	MAC 231YL (7 MAY 64)			OBSERVER: EM	q CS DATE	E:12-6-67

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REVISED		MODEL 195B
		model Ly
ANTENNA: NOSE STUB		VEHICLEGEMINI B W/MCC
ANTENNA LOCATION: NOSE		FULL SCALE FREQUENCY: 296 8mH2
MODEL SCALE: //3		MODEL FREQUENCY: 890A MH
MODEL SCALE:		MODEL FREQUENCY:
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configuration:	INTEGRATOR CO	
	FOLAR:ZATION:	$E\phi$ $E\theta$ $D$ OTHER:
	PLOTTED IN: RE	LATIVE FOWER db
REMARKS: OE RAISE HORIZ	TRANSMISSION	distance: 500 FX
DE BUILDE ESCHE	OBSERVER: E/	
MAG 2017L 17 MAY 640		K & E CO

DATE	MICDORNELL	PAGE
REVISED.	ST. LOUIS MISSOURI	REPORT TR 058-ADA.03
REVISED		MODEL 195B
ANTENNA: NOSE STUR	3	VEHICLE: GEMINI B WINCL
ANTENNA LOCATION: NOSE		FULL SCALE FREQUENCY: 296. S MHZ
MODEL SCALE: 13		MODEL FREQUENCY 890.9 MHZ
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	が出まり	$\theta = 90^{\circ}$
		φ=70°
CONFIGURATION: VII.	INTEGRATOR C	
	POLARIZATION:	$E\phi$ $\Theta$ OTHER:
		ELATIVE POWER db
REMARKS: GE RANGE HOE	TRANSMISSION	DISTANCE: 500 ff.
	OBSERVER:	WACE DATE: 12-0-0,
MAC 231YL (7 MAY 64)		K & E C

	VEHICLE: GENINI B WINOL
	MODEL FREQUENCY STORY A MARKET STATE OF THE
POLARIZATION: E PLOTTED IN: RELA TRANSMISSION DIS	φ [ Eθ ] OTHER:  TIVE POWER dt  STANCE: 500//
	INTEGRATOR COUNTY POLARIZATION: E PLOTTED IN: RELA

DATE	MCDONRELL	PAGE83
REVISED	ST. LOUIS, MISSOURI	REPORT TR 058-ADA 03
REVISED		MODEL 195B
<u> </u>		
ANTENNA: NOSE STUB		VEHICLE: GEMINI B W/MOL
ANTENNA LOCATION: NOSE		FULL SCALE FREQUENCY: 296 8 00 HZ
MODEL SCALE: //3		MODEL FREQUENCE ICA MA
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		· $\phi = 22$
CONFIGURATION: VIII	INTEGRATOR CO	DUNT:
VIII		EΦ LEΘ OTHER:
		CLATIVE POWER db
REMARKS: $\phi = RANGE VERTION$		DISTANCE: 500 H
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ap Carramania Marita & Madarimana Mahada ana atau da k	OBSERVER.	FINE CO DATE: 12-5-57

REVISED		MODOMNELL ST. LOUIS, MISSOURI		PAGE 84 REPORT TR 058-ADA 03 MODEL 195B	
ANTENNA: NOSE	STUR			VEHICLE GEMIN	I B WINCL
ANTENNA LOCATION:				FULL SCALE FREQU	
MODEL SCALE:	_13			MODEL FREQU	ENCY.STEAM!
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			POLARIZATION:	ΕΦ [ Εθ [ ]	OTHER:
				ATIVE POWER Ob	
REMARKS: $\phi \neq F$	ANSS VERT	I CAL	3	DISTANCE: SEC. 14.	
			OBSERVER:	o di CS	DATE:/2-6-6
MAC 231YL (7 MAY 64)					Кы

REVISED	ST. LOUIS, MISSOURI	PAGE 85  REPORT TR 058-ADA.03
O ANTENNA: NGSE STUR		VEHICLE: GEMINI & W/MOL
ANTENNA LOCATION: NOSE		FULL SCALE FREQUENCY 243 Om Ha
MODEL SCALE:		MODEL FREQUENCY: 729. O M. H.
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CONFIGURATION: 1X	INTEGRATOR CO	UNT:
CONFIGURATION: 1X	POLARIZATION:	EΦ Eθ OTHER:
- potential in the second	PLOTTED IN: RE	LATIVE POWER db
REMARKS: @ = FAUSE HOR	TRANSMISSION	DISTANCE: 500 f/.
	OBSERVER: FM	963 DATE: 12-6-6
HAC COLYL IT MAY 641		Kas

DATE	FACEDORIFIELL ST. LOUIS, MISSOURI	PAGE 86 REPORT TR 058-ADA.03
REVISED		MODEL 195B
		VEHICLE: GEMINI E WIMOL  FULL SCALE FREQUENCY 7290 MHZ  MODEL FREQUENCY 7290 MHZ
CONFIGURATION: 7	INTEGRATOR COU	φ=90°
REMARKS: G & FRASS MOST	POLARIZATION: E PLOTTED IN: RELA	φ Eθ L OTHER:
MAG 201YL (7 MAY 64)		ξ CS DATE: 12-6-67

DATE	MODONKIE	PAGE 87
REVISED	ST. LOUIS, MISSOURI	REPORT TR 058-ADA.03
REVISED		MODEL 195B
411.000		C. Sault B. Wland
ANTENNA: NOSE STUR		VEHICLE: GEMINI R WINCL
ANTENNA LOCATION: NOSE		FULL SCALE FREQUENCY 2432 11:42
MODEL SCALE: 13		MODEL FREQUENCY: 729.0 1. HZ
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CONFIGURATION	INTEGRAT	OR COUNT:
CONFIGURATION: TX		
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		IN: RELATIVE POWER db
REMARKS: OF FAMEE 16	TRANSMIS	ISION DISTANCE: 500 FF
	OBSERVE	REMPCS DATE:/2-6-(7)
MAC ISTYL 17 MAY 640		<b>ка</b> е со.

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REVISED	MODONNELL ST. LOUIS, MISSOURI	PAGE 88  REPORT TR 058-ADA.03  MODEL 195B
ANTENNA: NOSE STUR		VEHICLE: GEMINI & W/MOL
ANTENNA LOCATION: NOSE		FULL SCALE FREQUENCY: 243.0 MHZ
MODEL SCALE: 1/3		MODEL FREQUENCY: 729 Om HZ
		$\theta = \frac{1}{2}$
configuration: X	INTEGRATOR CO	
W/s Nosa FAIRING	POLARIZATION:	$E\phi$ OTHER:
	PLOTTED IN: REI	LATIVE POWER db
REMARKS: d = CRAAP?		DISTANCE: 500 PM.
REMARKS: \$\frac{1}{2} \overline{E} PANGE V	ODSERVED.	AE (15 DATE: 12-6-67

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MAC 231YL 17 MAY 641

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		θ= φ=90°
CONFIGURATION:	. INTEGRATOR CO	OUNT:
		EΦ Z Eθ OTHER:
		ELATIVE POWER db
REMARKS: d 1/		DISTANCE: 500 F.F.
REMARKS: DE PRIVEE V	OBSERVER: E	

MAC 231YL (7 MAY 64)

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REVISED			MODEL_		
REVISED			MODEL		
ANTENNA: NOSE STUR			VEHICLE GEM	INI B W/MOL	
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CONFICURATION		INTEGRATOR CO	INT.		
CONFIGURATION:		.		) oruge	
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ANTENNA: NOSE STUR		VEHICLE: GFMINI
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ANTENNA LOCATION: NESE		FULL SCALE FREQUENCY: 245.0 x 1/3
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ANTENNA: MOSE STUE		VEHICLE: GEMINI R
ANTENNA LOCATION: NESE		FULL SCALE FREQUENCY: 243.
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ANTENNA: NOSE STUR ANTENNA LOCATION: NOSE MODEL SCALE: 1/3		VEHICLE: SEAMON B  FULL SCALE FREQUENCY: Z43.Cr. 47  MODEL FREQUENCY: 725.Cm.47
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ANTENNA: NOSE STUB		VEHICLE: GEMINI B
ANTENNA LOCATION: NOSE		FULL SCALE FREQUENCY 243. Om te
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ANTENNA: NOSE STANTENNA LOCATION: N			VEHICLE: GEMIN	
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	ANTENNA: NOSE STUB		VEHICLE: GE MINI	8
	ANTENNA LOCATION: NOSE		FULL SCALE FREQUENC	4:243.0 mH=
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ĺ	CONFIGURATION: XI	INTEGR	ATOR COUNT: 5925	14.70
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		VEHICLE: GEMINI R
ANTENNA LOCATION: NOSE		FULL SCALE FREQUENCY: 243.0 mH
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ANTENNA: MOSE STURE ANTENNA LOCATION: MODEL SCALE: 13		VEHICLE: GEMINI E  FULL SCALE FREQUENCY: ZAZO MAN  MODEL FREQUENCY: 729.0 MAN  O = 1000  D = 1000		
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ANTENNA: NOSE STUB		VEHICLE: GEMINI 3
ANTENNA LOCATION: NOSE  MODEL SCALE: 1/3	6,0 mm	MODEL FREQUENCY: Z29.0 mH2  MODEL FREQUENCY: Z29.0 mH2  H=130°
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CONFIGURATION:  REMARKS:	POLARIZATION: PLOTTED IN: RE	UNT: 2597 E& EO OTHER: LATIVE POWER db
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ANTENNA: NOSE STUR		**************************************	VEHICLE: SEMIN	
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REVISED		MCDEL 195B
ANTENNA: NOSE STU ANTENNA LOCATION: NOSE MODEL SCALE:  13		VEHICLE: GEMINI B  FULL SCALE FREQUENCY 243.0 MH =  MODEL FREQUENCY: 729.0 MH =  0 = 0
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ANTENNA: NOSE STUE		VEHICLE: GEMINI B
ANTENNA LOCATION:_NOSE		FULL SCALE FREQUENCY: 2430 m # 2
MODEL SCALE: 13	January State of the state of t	MODEL FREQUENCY: 7250 MH2
CONFIGURATION: XT	POLARIZATION: E PLOTTED IN: RELF TRANSMISSION DI	STANCE: 500 ff.
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ANTENNA: NOSE STURE ANTENNA LOCATION: NOSE MODEL SCALE: 1/3		VEHICLE: GEAINI B  FULL SCALE FREQUENCY: 2430 MHZ  MODEL FREQUENCY: 7240 MHZ
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REVISED		MODEL 195B
ANTENNA: NOSE STUR ANTENNA LOCATION: NOSE MODEL SCALE: V3		HICLE: GEMINI B  LL SCALE FREQUENCY: 243.0 mHz  MODEL FREQUENCY: 7290 mi Hz
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ANTENNA: NOSE STUR	3	VEHICLE: GEMINI R
ANTENNA LOCATION: NOSE		FULL SCALE FREQUENCY 243.0
MODEL SCALE: 1/3		MODEL FREQUENCY 729.0 ()
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()	ANTENNA: NOSE STUB		VEHICLE: CEMINI B
	ANTENNA LOCATION: NOSE		FULL SCALE FREQUENCY 243. C M
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ANTENNA: NOSE STUR		VEHICLE: GE	MINIB
ANTENNA LOCATION: NOSE			EQUENCY: 2130 mHZ
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0	ANTENNA: NOSE STUR ANTENNA LOCATION: NOSE MODEL SCALE: 1/3	9	VEHICLE: GEMINI B  FULL SCALE FREQUENCY: ZABOTHE  MODEL FREQUENCY: ZZAO MHE
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ANTENNA: NOSE STUR		VEHICLE: GEMINI B
ANTENNA LOCATION: NOSE		FULL SCALE FREQUENCY 233.019:H3
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ANTENNA: NOSE STUR ANTENNA LOCATION: NOSE MODEL SCALE: 13		VEHICLE: GEMINIE  FULL SCALE FREQUENCY: 243.C IV. H3  MODEL FREQUENCY: 729.0 IV. H3
CONFIGURATION: X/.	POLARIZATION: E-PLOTTED III: RELA TRANSMISSION DIS	$0=30$ $\phi=$ AT: $0 \le 5$ $\phi = 0$ OTHER:  TIVE FOWER db  STANCE: $5 = 0$ $0 = 30$ $0$

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DATE	MCDORNELL	PAGE 119
REVISED	ST. LOUIS MISSOURI	TR 058-ADA.03
REVISED		MODEL 195B
THE		MODEL
ANTENNA: NOSE STUB		VEHICLE: CEMINI B
ANTENNA LOCATION: NOSE		FULL SCALE FREQUENCY: 248.C.IV. H.Z.
MODEL SCALE: 1/3		MODEL FREQUENCY: 729 CMH2
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	POLARIZATION:	EO LOTHER:
		LATIVE FOWER db
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MAG 251YL 17 MAY 940		Karco.

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DATE	Medornel	PAGE 120
REVISED	ST. LOUIS, MISSOURI	REPORT TR 058-ADA.03
REVISED		MODEL 195B
ANTENNA: MOSE STO	UB.	VEHICLE: GEMINI B
ANTENNA LOCATION: 1/0.5	5	FULL SCALE FREQUENCY: 243.0 m; H
MODEL SCALE: 13		MODEL FREQUENCY: ZZZO n.H.
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REVISED		MODEL 195B	
ANTENNA: HOSE STUR	- ·	VEHICLE: CEMINI 3	
ANTENNA LOCATION: NOSE		FULL SCALE FREQUENCY: 430 1011	
MODEL SCALE: 13		MODEL FREQUENCY: 729.00:11	
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		WIECS DATE: COG-	

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			RELATIVE TOWER OF			
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	REVISED		MODEL 195B -
( )	ANTENNA: NOSE STUB		VEHICLE: GEMINE
	ANTENNA LOCATION: NOSE		FULL SCALE FREQUENCY: 243.0 MHZ
	MODEL SCALE: 15	THE THE STATE OF T	MODEL FREQUENCY:729.CmHZ
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			RELATIVE POWER db
	REMARKS:	TRANSMISSION	1 DISTANCE: 500 (4;
		OBSERVER: E	March DATE: 15-12-12-12
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DATE	RICDORRIELL	PAGE121,		
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REVISED		MODEL 195B		
ANTENNA: NOSE STUB		HICLE: GEMINI B		
ANTENNA LOCATION: NOSE	FU	ILL SCALE FREQUENCY 2430 MHZ		
MODEL SCALE: 1/3		MODEL FREQUENCY: 729,000 HZ		
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ANTENNA: NOSE	STUB			VEHICLE: GEA	KINI R
ANTENNA LOCATION:	NOSE		pm, s. (100 - 8 or (100 m) (100 - 100 m)	FULL SCALE FREQ	UENCY: 243.0 m/12
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MAC 231YL (7 MAY 64)					KAECO.

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REVISED.		MODEL 195B
ANTENNA: NOSESTUR		VEHICLE: GEMINI R
ANTENNA LOCATION: NOSE		FULL SCALE FREQUENCY: 2430 WHZ
MODEL SCALE: //3		MODEL FREQUENCY: 7290 MAHE
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ANTENNA: NOSE S	TUR	<u>-                                    </u>	VEHICLE: CEMI	VI B
ANTENNA LOCATION:			FULL SCALE FREQUEN	
MODEL SCALE:	//3			cv:7290 m H
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REMARKS:				!
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MAC 231YL 17 MAY 64)				<u> </u>

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REVISED				MODEL	195B
ANTENNA: NOSE	STUB		VEHIC	LE: GEMIN	11 8
ANTENNA LOCATION:	NOSE		FULL \$	SCALE FREQUEN	icy:243.6 mh
MODEL SCALE:		W. I + 1 + 1 + 1			104:229:0 Kit H
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ANTENNA: WOSE	STUB		VEHICLE: GEMIN I R
ANTENNA LOCATION:	NOSE		FULL SCALE FREQUENCY: 2430 m
MODEL SCALE:	1/3		MODEL FREQUENCY: 7290 Mil
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REMARKS:		TRANSMISSION	N DISTANCE: 300 ff.  DATE:/5-6-6
		OBSERVER: /	MECS DATE: 15-6-67
HAC 231YL 17 MAY 641			X a E

DATE	MCDONNELL	
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() LUCE STUB		
ANTENNA: NOSE STOR		VEHICLE: GEMINI R
ANTENNA LOCATION: NOSE		FULL SCALE FREQUENCY: 243.0 mHZ
MODEL SCALE: 1/3		MODEL FREQUENCY: 729.0 mg HZ
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CONFIGURATION:	INTEGRATOR O	
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		RELATIVE POWER db
DEMARKS.		<b>a</b> .
REMARKS:		DATE OF THE
	OBSERVER: A	MECS DATE:/5-6-67

	DATE	MCDONNELL ST. LOUIS, MISSOURI	PAGE 131 TR 058-ADA.03 REPORT
	REVISED	·	MODEL 195B
	ANTENNA: NOSE STUR  ANTENNA LOCATION: NOSE  MODEL SCALE: 13		FULL SCALE FREQUENCY: 243.0 12142  MODEL FREQUENCY: 7290 12142
O_			25 20 15
	CONFIGURATION:	INTEGRATOR COUN POLARIZATION: E	$\theta = 170^{\circ}$ $\phi =$ $\phi = 170^{\circ}$ $\phi = 170$
	REMARKS:	PLOTTED IN: RELATION DIS	
	MAG 231YL 17 MAY 64I	12.171	K & 2 Co.

DATE	RICDOF	unell -	PAGE13	2
REVISED	ST. LOUIS, I		REPORT_	TR 058-ADA.03
REVISED				195B
ANTENNA: MOSE STUB			HICLE: GENT	i
ANTENNA LOCATION: 1057		FU!	LL SCALE FREQUE	NCY: 243.0MHZ
MODEL SCALE: // 3			MODEL FREQUE	NCY: 239.011Hz
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REMARKS:	`	TRANSMISSION DISTA	MCE: _C ;	DATE:/5-6-67
		OBSERVER: En t	<u> </u>	DATE:/5-6-67
MAC 251Y', 17 HAY 64)				K & E CO.

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## MODONNELL

ST. LOUIS, MISSOURI

PAGE	_133	
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MODEL \_195B

## ISOTROPIC CALCULATION

I<sub>2</sub> = Count for calibration radius = 10,000

For Electronic Intogrator and

K = 2 = 0.63662  $KI_2 = 6366:2$ 

db Recording

 $\frac{KI_2}{I_2}$  = Power Ratio

10 Log10 Power Ratio = Istropic db below calibration

A = Integrator Count Recorder Chart Level for calibration | - 3

CONFIGURATION XI						
sin 0	· e	A Pol.	ApPol.	A Pol.	A <sub>b</sub> Pol.	θ.
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0.50000	300	3378	0485	5062	.0354	1500
0.64279	1400	3318	0385	5810	0338	1400
0.76504	50°	4855	0.291	2508	0331	1300
0.85503	.60°	4712	0:234	2597	0266	1200
0.93989	700	5925	0188	5874	0/23	1100
0.98481	<sub>හිට</sub>	3535	0196	3431	0155	1000
1.00000	900	5499	0115			

$$\sum_{180}^{0} (A_{\theta} \sin \theta + A_{\phi} \sin \theta) = \underbrace{5.2.937.26}_{180} + 18 = I_{1} \underbrace{2.940.96}_{190}$$

Isotropic = 10 Log10 Power Ratio = 3.34 db Below calibration level Isotropic Chart Level = -6.44 db

FREQ. 729.0 MHZ WO FAIRING

REVISED	ST. LOUIS, MISSOURI	PAGE_134 REPORTTR 058_ADA.03 MODEL 195B
ANTENNA: NESE STUR ANTENNA LOCATION: NOSE		VEHICLE: GEMINI B FULL SCALE FREQUENCY: 243. Cm. 17
MODEL SCALE: 1/3		MODEL FREQUENCY: 729.6 in H
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CONFIGURATION: XII	INTEGRATOR COUL	NT: φ [ ] Εθ [ OTHER:
4077078825 F. J.	PLOTTED IN: RELA	TIVE POWER db
REMARKS: CHALLED TANK -	3 de 1/1// TRANSMISSION DIS	STANCE: SCOLL
MAG 231YL 17 MAY 64)	OBSERVER: 22777	5/13 DATE: 80-6-

REVISED	ST. LOUIS, MISSO	VEHICLE: GE M.  FULL SCALE FREQ	TR 058-ADA.03
ANTENNA: NOSE STUB		VEHICLE: GE M.  FULL SCALE FREQ	195B
ANTENNA LOCATION: NOSE		FULL SCALE FREQ	
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MODEL SCALE: 13		•	
		MODEL I HE	UENCY: 7290 mt
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COMPRENENT XII	INTE	ARIZATION: $E\phi \square E\theta \square$	OTHER:
and the state of t		TED IN: RELATIVE POWER db	i Other.
REMARKS:		NSMISSION DISTANCE:	CL
REMARKS: CONTEST TEXT	15 10 6/13/C	ERVER: En & CS	DATE: 32

REVISED	RECOURS MISSOURI	PAGE 136 REPORT TR 058-ADA.03 MODEL 195B
ANTENNA: NOSE STUR ANTENNA LOCATION: NOSE MODEL SCALE: 13		VEHICLE: GEMINI B  FULL SCALE FREQUENCY: 243.0 mHz  MODEL FREQUENCY: 722.0 mHz
TSOTICOPIC LEVEL. CONFIGURATION: XII	PLOTTED IN: RELA	φ E θ C OTHER:
REMARKS: ONLI BENTILLIL -3	OBSERVER: EM	STANCE: 500 SF ECS DATE: 20-0-11

REVISED	ST. LOUIS, MISSOURI	REPORT TR 058-ADA.03  MODEL 195B
ANTENNA: NOSE STUZA ANTENNA LOCATION: NOSE MODEL SCALE: 1/3		MODEL 1958  PEHICLE: CEMINI B  ULL SCALE FREQUENCY: 225.0 MHZ  MODEL FREQUENCY: 225.0 MHZ
		$\theta = 0^{\circ}$ $\phi =$
CONFIGURATION: ZIL	INTEGRATOR COUNT	
REMARKS:		IVE FOWER db  FANCE: 500 \$1.  E 05 DATE: 20-6-67

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REVISED		MODEL 195B
ANTENNA: NOSE STUB		VEHICLE: GEMINI B
ANTENNA LOCATION: NOSE		FULL SCALE FREQUENCY 243. Cm HZ
MODEL SCALE: //3		MODEL FREQUENCY: 789 Om HE
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CONFIGURATION: XII		CUNT: 0857
		$E\phi$ $E\theta$ OTHER:
05141574		ELATIVE POWER db
REMARKS:	TRANSMISSION	DATE: 20-6-6
HAC 23174 (7 1/4 64)	Observer: E	MECS DATE: 20-6-6

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ANTE	NNA: //CSE S NNA LOCATION: NO.	SE				NI B ency: <u>243,0 m/+ s</u> ency: <u>724.0 m/+ s</u>
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REMA		XII.		POLARIZATION: E PLOTTED IN: REL TRANSMISSION D	STANCE: 500	

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· Ο.	ANTENNA: NOSE STORMANTENNA LOCATION: NOSE  MODEL SCALE: 1/3		VEHICLE: GEMINI E  FULL SCALE FREQUENCY: 7290 mHz  MODEL FREQUENCY: 7290 mHz
<i>~</i> .	CONFIGURATION: XII	INTEGRATOR COL	θ= 30° φ=
()		POLARIZATION: FLOTTED IN: REL	EO OTHER:
	REMARKS:	OBSERVER: E	MÉCS DATE: 20-6 62

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O ANTENNA: MOSE STUB		VEHICLE: CEMINI B
ANTENNA LOCATION: 1005F		FULL SCALE FREQUENCY: 24 Confer
MODEL SCALE:		MODEL FREQUENCY 7290 16 F 2
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REVISED		ST. LOUIS	MISSOURI	REPORTT	R 058-ADA.03
REVISED				MODEL1	95B
ANTENNA, NOSE	0-43		L	G Tanala	
ANTENNA: ISOSE				VEHICLE: GEMIN	
ANTENNA LOCATION:	NOSE			FULL SCALE FREQUEN	
MODEL SCALE:				MODEL FREQUEN	cy: 729 Cn: 1/2
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CONFIGURATION:	XII		INTEGRATOR CO	UNT: 4/4-57	and the same and t
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CONFIGURATION:	INTEGRATOR C	OUNT: EO OTHER:
	A DESCRIPTION OF THE PROPERTY	ELATIVE POWER db
REMARKS:		
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REGUCKELLE. FAGE 168 TR 058-ADA.03 DATE\_\_\_\_\_ ST. LOUIS, MISSOURI REVISED\_\_\_\_\_ 195B MODEL\_\_\_ REVISED\_\_\_\_ ANTENNA: NOSE STUR VEHICLE: GE 1.4 101 F. ANTENNA LOCATION: NOSE FULL SCALE FREQUENCY: MODEL SCALE: MODEL FREQUENCY: INTEGRATOR COUNT: COMFIGURATION: 912 ( ) FOLKRIZ/TION: EO CTHER: TRANSMISSION DISTANCE: DATE: 200 REMARKS: PAGESTYL STRAY SO

	REVISED		ST. LOUIS.		REPORT_TA	058-ADA.03
0	ANTENNA: NOTE S				VEHICLE: SELVIN	L95B
	ANTENNA LOCATION:	1/as=			FULL SCALE FREQUEN	су:24 С. г
	MODEL SCALE:		POWER 4B		MODEL FREQUEN	ov.Z.Z.
<u>C</u>			THE TOTAL POPULATION FOR			
						0=/30° \$=
C	COMFIGURATION:	<u> </u>		PLOTTED IN: REL		
	REMARKS:			TRANSMISSION D	ISTANCÉ:	DATE:
	44C 23(1) L 47 ( A1 34)					v ., . 1.

ı	REVISED	ST. LOUIS, MISSOURI	PAGE 170  REPORT TR 058-ADA.03  MODEL 195B
0	ANTENNA: NOSE STORE  ANTENNA LOCATION: NOSE  MODEL SCALE: 13	0 0 0 0 0 0 0 0 0 0 0 0	VEHICLE: GENERAL SERVICE STATES AND A SERVICE STATE
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( )	CONFIGURATION: XII  REMARKS:	PLOTTED IN:	COUNT: 0337  I: EQ

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AND THE RESIDENCE AND ADDRESS OF THE PROPERTY		
CONFIGURATION:	ZII INTEGR	AYOR COUNT: 05555
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271100.0		O IN: RELATIVE POWER db
REMARAS:	Opera	VER: EN CS DATE:
	OBSER	ven, Fire City Dates

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REVISED	ST. LOUIS, MISSOURI	PAGE 172 REPORT TR 058-ADA.03 MODEL 195B	
ANTENNA: NOSE STUI ANTENNA LOCATION: NOSE MODEL SCALE:		VEHICLE: CFAMA F	
		0=/50 φ=	
CONFICURATION: XII		PUINT: $0375$ EQ $ V $ EQ $ V $ OTHER:	
REMARKS:	TRANSMISSION OCSERVER:	DISTANCE: DATE: 7	

DATE	RECONDENSIONAL ST. LOUIS, MISSOURI	PAGE 173  REPORT TR 058-ADA.03
REVISED		MODEL 195B
ANTENNA: MOST STORE  ANTENNA LOCATION: ASSE  MODEL SCALE:		VEHICLE:
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		0 - 150 b
CONFIGURATION:	FOLARIZATION	COUNT: 0//0  E E O
	L FLOTIED IN: 5	CHARVE FOYER OD

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DATE	ST. LOUIS, MISSOURI	REPORT TR 058-ADA 03
REVISED		MODEL 195B
<del></del>		-
ANTENNA: NOSE STO		VEHICLE: CE MAKE
ANTENNA LOCATION: 11002 MODEL SCALE: 13		FULL SCALE FREQUENCY: 242
MODEL SCALE:		MODEL FREQUENCY: 729
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CONFIGURATION:	// INTEGRATOR (	COUNT: 1300
		H: εφ Lines OTHER:
		RELATIVE FOWER 65
NEMARKS:		N DISTANCE:
n. c. and com of	Orsac., VER: 7	DATE: 22 DATE: 22
2. C. 21. L. 12. 13. 14. 17		24 22 2 200

REVISED	KHODO I KUELI st. louis, missouri	PAGE 175  REPORT TR 058-ADA,03  MODEL 195B
ANTENNA: DE STATE  ANTENNA LOCATION: DESE  MODEL SCALE:		VEHICLE: STEEL FREQUENCY: A STEE
Ö	POWER db	
	20	
0 35 20 25		30 25 0 15
		Q
CONFIGURATION: 7-1	THE PARTY OF THE PROPERTY OF THE PARTY OF TH	
REMARKS:	TRANSMISSI	DATE:

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## MCDONNELL

ST. LOUIS, MISSOURI

REPORT TR 058-ADA.03

MODEL 1957

## ISOTROPIC CALCULATION

I<sub>2</sub> = Count for calibration radius = 10,000

For Electronic Integrator and db Recording

K = 2 = 0.63662 KI<sub>2</sub> = 6365.2

 $\frac{KI_2}{I_1}$  = Power Ratio 10 Log<sub>10</sub> Power Ratio = Istropic db below calibration

A = Integrator Count Recorder Chart Level for calibration -3

CONFIERR TION ILL						
sin 0	θ	A Pol.	A Pol.	A_Pol.	A Pol.	0
0.17365	100	0857	0537	.5088	1300	1700
0.34202	200	2.108	0579	7843	0710	1600
0.50000	30°	3611	0627	5696	0375	1500
0.64279	400	3235	0495	6434	0338	1400
0.76604	50°	4647	0350	3060	0337	1300
0.86503	60°	45350	0302	32/6	0261	1800
0.93969	700	617.9	0218	7/50	0121	1100
0.98481	800	357.5	02.2.7		0149	JC0 <b>0</b>
1.00000	500	\$648	0188		The second secon	

 $\sum_{180}^{180} (A_9 \sin 0 + A_9 \sin 0) = \frac{55574.55}{180} + 180 = \frac{3}{13} \frac{3$ 

6366.2 = Power Ratio 2.03

Isotropic a 10 Logio Power Ratio a 3.05 db Balow colibration level

Icotropic Chart Lavel 4 . 6.05 db

1 1 1 1 / FALL 1176